The National Economic Accounts of the United States

REVIEW, APPRAISAL, AND RECOMMENDATIONS

A Report
by the National Accounts Review Committee
of the National Bureau of Economic Research

Reprinted from *Hearings* before a subcommittee
of the Joint Economic Committee, 85th Congress
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NATIONAL BUREAU OF ECONOMIC RESEARCH, INC.

THE NATIONAL ECONOMIC ACCOUNTS OF THE UNITED STATES

REVIEW, APPRAISAL, AND RECOMMENDATIONS

BY THE

NATIONAL ACCOUNTS REVIEW COMMITTEE OF THE NATIONAL BUREAU OF ECONOMIC RESEARCH

EXTRACT

FROM

HEARINGS BEFORE THE SUBCOMMITTEE ON ECONOMIC STATISTICS OF THE JOINT ECONOMIC COMMITTEE, CONGRESS OF THE UNITED STATES, EIGHTY-FIFTH CONGRESS, FIRST SESSION

(Not printed at Government expense)

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EXECUTIVE OFFICE OF THE PRESIDENT,
BUREAU OF THE BUDGET,
Washington, D. C., October 29, 1957.

HON. RICHARD BOLLING,
Chairman, Subcommittee on Economic Statistics, Joint Economic Committee, Washington, D. C.

MY DEAR MR. BOLLING: In accordance with your request, I am transmitting herewith a copy of The National Economic Accounts of the United States: Review, Appraisal, and Recommendations for inclusion in the printed hearings on the report by the Subcommittee on Economic Statistics. This is the official report of the National Accounts Review Committee as submitted to the Bureau of the Budget by the National Bureau of Economic Research.

Sincerely yours,

RAYMOND T. BOWMAN,
Assistant Director for Statistical Standards.

NATIONAL BUREAU OF ECONOMIC RESEARCH, INC.,
New York, N. Y., August 9, 1957.

DR. RAYMOND T. BOWMAN,
Director, Office of Statistical Standards,
Bureau of the Budget, Washington, D. C.

DEAR DR. BOWMAN: I transmit herewith the National Economic Accounts of the United States: Review, Appraisal, and Recommendations, a report prepared by the National Accounts Review Committee of the National Bureau of Economic Research at the request of the Office of Statistical Standards of the Bureau of the Budget.

There will be differences of opinion on particular findings and recommendations of the committee, some of which are indicated in the body of the report and in the notes attached to it. The report as a whole, however, deserves—and we may expect will command—the serious attention of all who recognize the importance of the national economic accounts in the management of public and private economic affairs.

Arrangements between the National Bureau and the Office of Statistical Standards of the Bureau of the Budget for the preparation of the report were concluded on November 2, 1956. We are deeply grateful to the public-spirited members of the National Accounts Review Committee, all of whom devoted a substantial portion of their time and energy during the next 8 months to the difficult task of preparing the report; and to the many persons inside and outside the Federal Government who participated in the discussions, provided essential information, and reviewed drafts of the report.

The report was approved by the board of directors of the National Bureau, in accordance with its usual procedure, as meeting the objectives of the National Bureau—"to ascertain and to present to the public important economic facts and their interpretation in a scientific and impartial manner." As the resolution of the board governing the relation of the directors to the work and publications of the National Bureau states, approval by the board does not, however, imply that each member of the board has read the report, or has passed upon its validity in every detail.

The subject of national income and related economic accounts has long been of interest to the National Bureau. We are glad to add the present report to the series of reports in this area which began in 1921 with the publication of the first National Bureau volume on income in the United States.

On behalf of the National Bureau, I would like to express our appreciation to the Office of Statistical Standards of the Bureau of the Budget for this opportunity to be of service.

Sincerely yours,

SOLOMON FABRICANT,
Director of Research.

THE NATIONAL ECONOMIC ACCOUNTS OF THE UNITED STATES

REVIEW, APPRAISAL, AND RECOMMENDATIONS

A report to the Office of Statistical Standards, Bureau of the Budget, prepared by the National Accounts Review Committee of the National Bureau of Economic Research, June 1957

Relation of the Directors to the Work and Publications of the National Bureau of Economic Research

1. The object of the National Bureau of Economic Research is to ascertain and to present to the public important economic facts and their interpretation in a scientific and impartial manner. The board of directors is charged with the responsibility of insuring that the work of the National Bureau is carried on in strict conformity with this object.

2. To this end the board of directors shall appoint one or more directors of research.

3. The director or directors of research shall submit to the members of the board, or to its executive committee, for their formal adoption, all specific proposals concerning researches to be instituted.

4. No report shall be published until the director or directors of research shall have submitted to the board a summary drawing attention to the character of the data and their utilization in the report, the nature and treatment of the problems involved, the main conclusions and such other information as in their opinion would serve to determine the suitability of the report for publication in accordance with the principles of the National Bureau.

5. A copy of any manuscript proposed for publication shall also be submitted to each member of the board. For each manuscript to be so submitted a special committee shall be appointed by the President, or at his designation by the Executive Director, consisting of 3 directors selected as nearly as may be, 1 from each general division of the Board. The names of the special manuscript committee shall be stated to each Director when the summary and report described in paragraph (4) are sent to him. It shall be the duty of each member of the committee to read the manuscript. If each member of the special committee signifies his approval within 30 days, the manuscript may be published. If each member of the special committee has not signified his approval within 30 days of the transmittal of the report and manuscript, the director of research shall then notify each member of the board, requesting approval or disapproval of publication, and 30 additional days shall be granted for this purpose. The manuscript shall then not be published unless at least a majority of the entire board and a two-thirds majority of those members of the board who shall have voted on the proposal within the time fixed for the receipt of votes on the publication proposed shall have approved.

6. No manuscript may be published, though approved by each member of the special committee, until 45 days have elapsed from the transmittal of the summary and report. The interval is allowed for the receipt of any memorandum of dissent or reservation, together with a brief statement of his reasons, that any member may wish to express; and such memorandum of dissent or reservation shall be published with the manuscript if he so desires. Publication does not, however, imply that each member of the board has read the manuscript, or that either members of the board in general, or of the special committee, have passed upon its validity in every detail.

7. A copy of this resolution shall, unless otherwise determined by the board, be printed in each copy of every National Bureau book. (Resolution adopted October 26, 1926, and revised February 6, 1933, and February 24, 1941.)

JUNE 21, 1957.

DR. SOLOMON FABRICANT,
Director of Research,
National Bureau of Economic Research,
New York, N. Y.

DEAR DR. FABRICANT: The National Accounts Review Committee, organized by the National Bureau in November of last year, herewith submits its report with accompanying appendixes, as adopted at today's meeting.

The committee has attempted to review the major questions in the field of national economic accounting. It has not undertaken, however, to prepare a comprehensive treatise on the subject. The scope and limits of the committee's report as well as the principles that guided the committee are described in chapter III.

The committee wants to thank the numerous representatives of United States Government agencies, business, labor and academic organizations, many individual economists, the Statistical Office of the United Nations and the Statistical Offices of Denmark, the Netherlands and Norway, who have aided the committee's inquiries, often by the supply of detailed memorandums. The committee also appreciates the assistance of the nearly 100 respondents to its questionnaires. The committee had the full cooperation of the agencies engaged in the preparation of the national economic accounts, primarily the National Income Division of the Office of Business Economics of the Department of Commerce and the Flow-of-Funds Section of the Division of Research and Statistics of the Board of Governors of the Federal Reserve System. Morris Copeland, Edward F. Denison, George Jaszi, and Simon Kuznets read an early draft of the report and made many helpful suggestions. Many others—too numerous to mention—reviewed drafts of individual sections of the report and contributed their expert knowledge on many technical problems. The committee, however, takes full and sole responsibility for the findings and recommendations of the report.

Mr. Stanley Lebergott, designated by the Office of Statistical Standards, Bureau of the Budget, to keep in touch with the committee, attended all its meetings and in many ways expedited the progress of our work. The committee finally wants to express its appreciation to Mrs. Alice Hanson Jones, who took over the difficult task of secretary early in the committee's operations.

Sincerely yours,

(Signed) Raymond W. Goldsmith, *Chairman.*
V. Lewis Bassie.
Gerhard Colm.
Richard A. Easterlin.
Edwin B. George.
Joseph A. Pechman.
Roy L. Reierson.
Richard Ruggles.
Lazare Teper.

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Chapter I. Summary of Findings and Recommendations

In this brief summary the committee's main findings and recommendations are set forth in nontechnical language. This summary cannot repeat the explanations and qualifications contained in the body of the report which are indispensable for a full appraisal of the committee's recommendations.

1. SCOPE OF NATIONAL ECONOMIC ACCOUNTING

National economic accounting may be defined as the systematic arrangement of statistics that describe the operation of the Nation's economy during a year (or a shorter period) in much the same way as business accounts describe the operations of an enterprise. The national economic accounts are made up of five main segments:

(*a*) The national income and product accounts register the value of the output of finished goods and services of the Nation and the incomes flowing to the various groups as a result of their contribution to output. These accounts make up what are commonly called national income statistics. They are published on a regular annual and quarterly schedule.

(*b*) The international balance of payments statement reflects and classifies all payments occurring between the United States and foreign countries. It is published on an annual and quarterly basis.

(*c*) The flow-of-funds statements, also known as moneyflow statements, show the total funds received by the various groups—households, business and financial enterprises, and Government—and the use they make of these funds. Transactions in existing assets are included in the flow-of-funds statements, but are excluded from the income and product accounts. Flow-of-funds statements are now prepared annually.

(*d*) Input-output tables trace in detail the purchases and sales of raw materials, semifinished goods, finished commodities, and services among industries, using a much finer industry and commodity classification than is possible in income and product accounts and in flow-of-funds statements. Because of their great detail, input-output tables have been drawn up only occasionally—the last time for 1947—rather than on a regular schedule.

(*e*) The national balance sheet lists, for the various groups and for the Nation as a whole, the value of tangible and intangible assets and of liabilities, in the aggregate and by type, and shows the difference between assets and liabilities, usually called net worth or equity. The listing of tangible assets—land, structures, equipment, inventories, etc.—is sometimes referred to as a national wealth statement. National balance sheets and related statements have been compiled only for a limited number of dates and only unofficially.

2. FINDINGS

(*a*) In the two decades since the national income and product accounts were added to the economic intelligence of the United States, national economic accounting has become one of the chief tools for the formulation of Government economic policy and of

business policy. Most long-range policy decisions of the Government, of large business enterprises, and of many trade associations and labor and agricultural organizations now are formulated within the framework of the national economic accounts, explicitly or by implication. The use of data from the national economic accounts is also frequent in the formulation of short-range decisions. Market analysis as we know it today is hardly possible without national accounting data. The agencies of the Federal Government that are concerned with economic stability—e. g. the Council of Economic Advisers, the Board of Governors of the Federal Reserve System and the Treasury Department—could not function as they do without the national economic accounts or something very similar to them. The Congress, and particularly the Joint Economic Committee and the Joint Committee on Internal Revenue Taxation, would also be considerably hampered in their operation without national economic accounts. The work of all these agencies would benefit from improvement of the national economic accounts.

(*b*) Work done in the United States, both inside and outside of Government, has made significant contributions to the development of national economic accounting. The United States is still alone in having detailed flow-of-funds statements and national balance sheets covering a considerable period of time. However, our needs for accurate and up-to-date national economic accounting data for Government policy and business planning have increased even more rapidly than the improvements made in this field.

(*c*) The quality of the estimates is by and large as good as the primary data and the funds available for their processing and analysis permit. The estimators of the national economic accounts have extracted very nearly as much information from the available statistics as is possible with their limited funds. The committee, in its numerous contacts with users, has heard no complaints about the competence or impartiality of the estimators.

(*d*) With very few exceptions the requirements for better and more detailed national accounting data, and data better fitted to users' needs, call for improvement in, or addition to the stock of primary statistics with which the national accountant must work. There is urgent need and ample room for such improvements and additions. The most important gaps in the basic data occur in the fields of small (unincorporated) business; and of capital expenditures, both public and private.

(*e*) The structure of the accounts, particularly the integration of the five main sets of accounts, is open to improvement. This is one area where the United States seems to have fallen behind those foreign countries that have advanced most rapidly during the past decade in building up a systematic set of national economic accounts.

(*f*) The National Income Division of the Office of Business Economics of the Department of Commerce, which is responsible for the national income and product accounts, has performed most creditably considering how understaffed and overworked it is, but it urgently needs reinforcements. The Division has been able to maintain, or even to increase, its volume of output of current statistics only by delaying needed extensions of the data, by postponing repair and maintenance work on some of its figures and by limiting its

experiments with alternative estimating procedures. As in business such a process of retrenchment cannot be continued indefinitely without serious consequences.

3. Recommendations

The following very brief summary of the more important recommendations made in the report omits those that are of interest primarily to specialists. The recommendations are given without regard to the order in which they appear in the report; without indicating the reason for making each recommendation; without discussing the technical problems involved; and without indicating in detail when and how each of the recommendations is to be achieved—all matters discussed in more or less detail in the body of the report. Chapter III in particular, which sets forth the considerations that have guided the committee in its recommendations, may be regarded as an essential supplement to these pages. Compressed as they must be here the committee's recommendations may appear to constitute a sharper break with present practice than is actually the case.

The committee's recommendations can be grouped roughly into five major categories: (*a*) improvements in the basic data; (*b*) changes in the structure of the national economic accounting system; (*c*) improvements in the national income and product estimates; (*d*) improvements of estimates of other segments of the national economic accounts; and (*e*) organizational changes. The order of the recommendations under each heading is not necessarily an indication of their relative importance. The figures in brackets indicate the portions of the report in which the full recommendation is discussed.

(*a*) *Improvements in basic data*

Most national economic accounting figures are built up like a mosiac from very varied primary statistics, that are not primarily collected for use in the national accounts. Improvement in these basic data is thus a prerequisite for most of the substantial improvements in the quality or scope of the estimate in the national economic accounts recommended by the committee.

The committee, therefore, urges in the strongest possible terms the improvement of the data underlying the estimates that are entered in the national income accounts. Although we have not attempted to survey all aspects of data adequacy, some data problems are discussed in the report. Other data are widely recognized as being inadequate and hence have not been examined in detail.

We are inclined to attach the highest priority to improvements in eight areas, all of which are essential not only for the improvement of the national economic accounts, but are of value in and of themselves for current economic analysis:

(1) The financial situation of noncorporate business—profits, capital expenditures, investment, and withdrawal of capital by owners (ch. XI, sec. 2.a).

(2) The current earnings and financial situation of corporations outside of the well reported manufacturing sector (ch. VIII, sec. 1).

(3) Detail on inventories by durability and end-use; additional information on inventory accounting practices; and more reliable

information on the prices significant for deflating inventory book values (ch. XI, sec. 2.b).

(4) Detail on sales by manufacturers and by retailers by commodity line, or similar detailed grouping, and by major buyer groups; including the purchase of durable goods cross-classified by type of commodity and industry of buyer (ch. VII, sec. 4).

(5) The current value of construction, in particular new nonresidential construction and repair and maintenance on all types of structures (ch. VII, sec. 4).

(6) Classification of Government purchases by type of commodity (ch. VII, sec. 2.b).

(7) Adjustment for under- or over-reporting of income and business expenditures of individuals, partnerships, and corporations as disclosed by audit control studies (ch. X, sec. 2; ch. XI, sec. 2.a).

(8) Additional price data to extend and improve the deflation of various segments of the national economic accounts (ch. VI).

In most of these areas, improvements call mainly for an extension of existing Government programs or for the restoration of programs that have been curtailed or abandoned because of budgetary restrictions. Since these improvements involve the work of many agencies we urge the Office of Statistical Standards to expedite the development of a consistent program for them, and express the hope that the Congress will give sympathetic attention to the need for such essential basic statistics.

(b) Changes in the structure of the system of national economic accounts

(1) The five segments of the national economic accounts, which have hitherto led rather independent lives, should be integrated into a single national economic accounting system. This recommendation for the development of a conceptually integrated system of national economic accounts is one of the main recommendations of the committee, if not the most important one. This integrated system contains elements which can be implemented immediately. It also provides a framework for the future integration of flow-of-funds, input-output, balance of payments, balance sheet and national wealth data with the income and product accounts (ch. V, sec. 4, and appendix A).

(2) For the national income and product accounts a functional five-account system is recommended for immediate implementation, and it is hoped that the accounts showing changes in assets and liabilities for various institutional sectors can follow shortly (ch. V, sec. 5, and appendix A).

(3) Separate figures should be shown for the income and expenditures of a number of sectors that are now combined in one "household" sector, viz: nonfarm households, farm households, nonprofit organizations (such as educational institutions, churches, foundations, and labor unions), private pension, health and welfare funds, and personal trust funds. At a later date figures for owners of unincorporated nonfarm business should also be presented separately (ch. VII, sec. 1).

(4) Separate and more detailed figures should be shown for the Federal Government, for State governments, for local governments, and for Government enterprises. The estimates should also provide

a reconciliation with published Government budget data (ch. VII, sec. 2).

(5) Figures should be provided to permit users to treat purchases of consumer durables and Government outlays for structures and equipment as capital expenditures which increase the stock of material wealth (ch. VII, sec. 1.c and 2.b).

(6) Estimates of depreciation allowances and stocks of reproducible durable assets should be shown on the basis of replacement cost as well as original cost—the present basis—so that users may work with the figures most serviceable for their purposes (ch. VII, sec. 5).

(7) A change-in-assets-and-liabilities account should be set up for each of the main groups—households, business, and Government—subdivided as suggested in (3) above. Such an account would provide a link between the income and product accounts and the national balance sheets (ch. V, sec. 6).

(8) As a further link between income and product accounts and national balance sheets—and because of the importance of the figures for many questions of economic policy—estimates of realized capital gains of the main sectors should be provided as an integral part of the system of national economic accounts. These estimates should be extended as soon as the data permit to unrealized capital gains (ch. VII, sec. 1.d).

(9) As an increasing proportion of large business enterprises and Government agencies shift to electronic accounting, a large body of new data may become available to the compilers of the national economic accounts and old data will become available much more rapidly. To insure that the national economic accounts make full use of these potentialities a thorough investigation of the technical problems involved should be made by a study group of economists, statisticians, accountants, comptrollers, and computer engineers (ch. XV).

(*c*) *Improvements in the national income and product accounts*

(1) More emphasis should be put on the development of estimates of national product and income in constant prices. These figures are as essential for a full appraisal of economic growth and structural changes in the economy as the usual estimates which are expressed in fluctuating current prices. Estimates of the real product of various industrial sectors should be developed, and greater detail is needed on the present estimates of consumption, investment, and Government expenditures in constant prices (ch. VI).

(2) The estimates of national product in constant prices should be published quarterly rather than only at annual intervals which are too long when prices change as rapidly as they have done in the postwar period (ch. VI, sec. 2).

(3) The quarterly national income and product estimates should be released in somewhat greater detail (ch. VIII, sec. 3).

(4) To enable business and economic analysts to make use of the latest figures, significant revisions in quarterly and annual estimates should be published currently rather than held—as is now the general practice—until about 6 months after the end of the year (ch. VIII, sec. 4; ch. XI, sec. 1.c).

(d) Improvements in estimates of other segments of national economic accounts

(1) The flow-of-funds statements, now available annually, should be put on a quarterly basis and released within about 3 months after the end of the quarter. This is necessary if they are to be used in the current analysis of the capital market, a purpose for which they are eminently suited (ch. XII, sec. 2).

(2) Continuous efforts should be made to put the flow-of-funds statements more consistently on a gross basis; to show separately purchases and sales rather than only the net balance; and to use actual flow figures rather than to infer them from unadjusted changes in reported holdings. These improvements will increase the accuracy of the flow estimates for intangible assets, particularly for stocks and bonds (ch. XII, sec. 2).

(3) Preparations should be made to utilize the results of the 1958 economic censuses to build up an input-output table for that year. No input-output table has been available for a period later than 1947, and a more up-to-date table will be helpful in many fields of economic and business analysis, even if it is less detailed than the 1947 table (ch. XIII, sec. 5).

(4) Consideration should be given to utilizing the 1960 census of population as the occasion for a concerted effort on the part of Federal statistical agencies to fill some of the gaps in our knowledge about the distribution of personal income by size (ch. X, sec. 11).

(5) A thorough study should be made of the conceptual and practical problems of constructing national and sectoral balance sheets. This study, which might well be undertaken by a private research organization, could serve as the basis for regular, and ultimately annual, estimates by a Government agency. Once this stage is reached the main gap in the official interrelated system of national economic accounts which is our goal will be closed (ch. XIV, sec. 5).

(e) Organization of national economic accounting work

(1) The summary integrated system of national economic accounts should be prepared and published by one agency within the Federal Government to insure that a fully integrated set of data which are internally consistent will be prepared, appearing at regular intervals in a single publication. Different agencies will be concerned with the detailed estimation of different segments of the national economic accounts for their own operating use (e. g., input-output tables, flow-of-funds statements, balance-of-payments tables). Collection of the basic statistics used in the various national economic accounts will necessarily continue to be divided among many agencies (ch. IV, sec. 3).

(2) A substantial increase in the staff of the National Income Division of the Department of Commerce, which now provides all our national income and product estimates, is an urgent necessity and a prerequisite of many of the committee's recommendations. Such an increase is the more urgent as the size of the Division has been reduced by about one-fourth since 1950 while its responsibilities have expanded (ch. IV, sec. 3).

(3) The increase in the National Income Division's budget should be sufficient to permit the addition of a Research Section which should assess the accuracy of the estimates available, continuously

explore the possibilities of improvements in the estimates, experiment with alternative concepts and data sources, and consider basic problems which cannot be adequately handled by the other sections that are fully occupied with the task of preparing current estimates (ch. IV, sec. 3).

4. COSTS, TIMING, AND PRIORITIES OF RECOMMENDATIONS

Three important problems that arise in connection with the implementation of the committee's recommendations remain to be considered: the costs involved in the recommendations, the timing of the recommended improvements in and additions to our national economic accounts, and the order of priority among the recommendations.

The proposals made in this report are not costless. Even though the committee suggests that on a number of controversial problems exploratory work should be continued and intensified, by private research organizations, it also recommends a considerable expansion of the statistical activities of the Federal Government.

The committee is aware of the responsibility of anybody who, in the light of an already large Federal budget, recommends additional expenditures. However, all the major economic statistical programs of the Federal Government, including those of the Federal Reserve Board, have in recent years cost between $35 million and $45 million per year. This is a very small item—about one-twentieth of 1 percent—in the Federal budget, and most of it is spent for purposes other than the needs of the national economic accounts. The relatively small increase in these outlays that would be necessitated by the committee's recommendations is not only compatible with increased economy and efficiency in Government and business, but is essential to accomplish these goals given the widespread private and public use of the data. It would be false economy to abandon or postpone much-needed improvements in our economic intelligence. In terms of improved business management and more rational Government policies hardly any other expenditure by the Federal Government promises higher dividends.

The committee recognizes that not all of its recommendations could be carried out at the same time. We have indicated in the text the recommendations that could be executed promptly, those that require a longer time for implementation and those that we regard as long-range objectives.

In addition to the improvements in the structure of the national economic accounts, we recommend early implementation of those measures that would substantially improve the data used in the national income and product accounts, particularly those that would give valuable insights into economic behavior by providing information separately on a larger number of significant sectors of the economy. We suggest that the recommended changes in the flow-of-funds statements be given prompt attention by the Federal Reserve Board, partly because these statements are already being prepared regularly and partly because they tie in closely with the income and product accounts. We also recommend early strengthening of the staff of the National Income Division, including the establishment of a research section which can devote its efforts to developmental work.

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The committee regards as supplementary though important recommendations, particularly for the long-range development of the national economic accounts, the establishment on a regular basis of two segments of the integrated national economic accounting system in addition to the now existing segments (national income and product accounts, flow-of-funds statements, and balance-of-payments tables), viz input-output tables and balance sheets. The committee does not regard these various proposals as competing with each other. Each of them has an important place in the development of a comprehensive system of national economic accounts.

Chapter II. Organization and Activities of Committee

1. Terms of Reference of Committee

The National Accounts Review Committee was set up by the National Bureau of Economic Research at the request of the Office of Statistical Standards of the Bureau of the Budget. Arrangements were concluded early in November 1956 and the committee began to operate immediately thereafter, holding its first meeting on November 11.

The main function of the committee, it was agreed, was to "undertake a review of the national income accounts and closely related accounts now being prepared or requiring preparation by the Federal Government, and make recommendations concerning needed improvements and additions for more effective analysis. The objective of the review is to provide a thorough examination and evaluation of the national income accounts and related accounts and to devise a program to effect further improvements in the accounts when feasible. The review is to ascertain what reorientation in concept and statistical procedure is required in the accounts in order that they may serve Government and private uses most effectively." The committee interpreted the term "related accounts" to include classifications of the well-known national income and product account by sector, by size of income and other characteristics of households, and by State, or other area; as well as the more recently developed segments of a complete system of national accounts, namely, flow-of-funds statements, input-output tables, national balance sheets, and the old established balance of international payments.[1]

The national bureau entrusted the conduct of the study specified in the contract to a committee consisting of the following members:

(1) V. Lewis Bassie, professor of economics, University of Illinois.
(2) Gerhard Colm, chief economist, National Planning Association.
(3) Richard A. Easterlin, associate professor of economics, University of Pennsylvania.
(4) Edwin B. George, director of economics, Dun & Bradstreet, Inc.
(5) Raymond W. Goldsmith, member, research staff, National Bureau of Economic Research—Chairman.
(6) Joseph A. Pechman, research staff, Committee on Economic Development.
(7) Roy L. Reierson, vice president, Bankers' Trust Co.

[1] The various segments of a system of national accounts are briefly described in ch. V, sec. 1. Somewhat more detailed descriptions will be found in chs. V, sec. 2, IX, X, XII, XIII, and XIV.

(8) Richard Ruggles, professor of economics, Yale University.
(9) Lazare Teper, director of research, International Ladies' Garment Workers' Union (AFL-CIO).

2. ACTIVITIES OF THE COMMITTEE

The basic considerations which have guided the committee in its work are summarized in chapter III. They will suggest the reason for the way in which the committee has operated and has framed its report and recommendations.

The committee ascertained the experience and needs of the main groups of users of national accounting data by a series of meetings and by means of three questionnaires. About a dozen meetings were held with representatives of Federal agencies both those primarily producing and those primarily using national accounting data; with university, business and labor economists specializing in the national accounting field; and with representatives of the American Institute of Accountants.

Two questionnaires were sent out to business, labor, and academic economists (but excluding economists in the Federal Government) working in the field of national accounting and over 70 replies were received. The replies to these two questionnaires form the basis of the statement on what users want of the national accounts in the following section. The third questionnaire was directed specifically to persons interested in regional aspects of national accounting and was completed by about 25 respondents. It is discussed briefly in chapter IX.

The committee held 12 meetings usually lasting 2 days to plan its work and to discuss successive drafts of the report. The final draft was adopted unanimously at the meeting of June 21, 1957.

3. A SURVEY OF USERS' NEEDS

To inform itself about the requirements and suggestions of the users of national accounting data, the committee in addition to numerous personal discussions distributed the first two questionnaires to a number of economists and statistician outide the Federal Government who presumably were making fairly regular use of these statistics. They included business, labor, and academic economists known to be interested in national income and product accounts and flow-of-funds statements, members of the conference on research in income and wealth and members of an informal association of business economists. The questionnaires inquired both about the use made in the past of available national income data and about respondents' evaluation of the need for specific improvements and extensions in the accounts. The questionnaire used is reproduced in appendix C.[1] The answers to the questionnaires provide an impression of informed opinion though they do not result from a scientific sampling of all users.

It is interesting to note, for example, that of the improvements and extensions in the national accounts about which respondents were queried, quarterly estimates of gross national product at constant prices were checked more often than any other question, although the

[1] A slightly different shorter questionnaire was used in the beginning and about a dozen replies were received which are not included in the tabulations of appendix C.

lead was small. Next in order, cited with approximately equal frequency, were the following improvements:

(*a*) Addition of information on stock of consumer durables.

(*b*) Reconciliation of consolidated Government receipts and expenditures of the Federal Government as shown in the national income and products accounts with the conventional and cash budget figures.

(*c*) Classification of Government purchases of goods and services into current and capital expenditures, a distinction essential for the estimation of Government saving and investment.

(*d*) Separation of nonprofit institutions and a few other groups now lumped together with households into the personal sector of the national income and product accounts.

(*e*) Quarterly estimates of personal saving on a balance-sheet basis, i. e., as the result of independently estimated changes in the different types of assets and liabilities of households.

(*f*) Estimates of personal income in constant dollars.

(*g*) Estimation of gross national product and its principal components on a monthly basis.

Suggestions checked next most often in the replies as being frequently needed, included the following:

(*h*) Improvement in the method of allocating expenditures for certain commodities, e. g., automobiles, between consumers and business.

(*i*) Classification of expenditures on producer durables and of their purchases by type of commodities and by industry.

(*j*) Shift of depreciation estimates to a replacement-cost basis from the original cost basis now prevailing.

(*k*) Flow-of-funds accounts on a quarterly basis in addition to the annual statements now available.

(*l*) Regular estimation of a national balance sheet.

There were considerable differences in the improvements which were emphasized by business and by academic economists, and they tended in the expected direction. Business and labor economists most often asked for additional or improved short-term estimates, e. g., monthly estimates of gross national product, and quarterly estimates of gross national product and personal income in constant prices. Academic economists, on the other hand, showed most pronounced interest in additional annual breakdowns, particularly the separation of households from nonprofit institutions and other types of units now lumped together in the personal sector and in the separation of current and capital expenditures of the Government.

There was surprisingly little demand among the respondents in both groups for some information in which considerable interest has been expressed in the past, for example: the separation of imputations, a breakdown of inventories or purchases of durables by industry, depreciation estimates on the basis of the declining-balance method, a classification of Government expenditures by type, national income figures by industry of origin in constant prices, regular (presumably annual) input-output tables, and a more detailed discussion or description of estimating procedures than is now provided, particularly in National Income, 1954 edition.

Although the committee has not felt bound by this straw vote of users, it has, of course, given considerable weight to the opinions expressed in the replies in making its own recommendations.

4. ARRANGEMENT OF REPORT

For readers interested only in the bare bones of the committee's findings and recommendations a skeleton summary has been provided in chapter I. The committee, however, felt it necessary to provide as a background for its recommendations, first, a statement of the considerations which have guided the committee in its work (ch. III); secondly, a brief description of the present status of national accounting in the United States and abroad (ch. IV); thirdly, a condensed description of the uses of a system of national accounts and of the form of an integrated system which the committee regards as the long-range goal (ch. V); fourthly, a more detailed discussion of a number of conceptual and practical special problems of the national income and product accounts (chs. VI to VIII) and by the breakdowns of the accounts by regions (ch. IX) and by size of income (ch. X); fifthly, a consideration, necessarily very selective, of the statisical adequacy of the national income and product estimates (ch. XI); and sixthly, a discussion of the other chief components of a system of national accounts and of their integration with the national income and products accounts, namely, flow-of-funds statements (ch. XII), input-output tables (ch. XIII) and balance sheets (ch. XIV).

The appendixes contain supporting documents, and tables and a list of detailed technical suggestions for improvement in the national income and product accounts and the primary data underlying them which was submitted to the committee by George Jaszi, Chief of the National Income Division (appendix E).

Chapter III. Guiding Considerations

At the outset of the substantive part of the report it appears advisable to summarize briefly the considerations which have guided the committee in the conduct of its study in the framing of its report, and in the selection of its recommendations. Such an explicit statement of the considerations underlying the report will, it is hoped, assist readers in putting the specific recommendations to be found in the remainder of the report into their appropriate framework. Some of these considerations will be discussed in more detail in later sections; for others the brief mention in this section will have to suffice.

(*a*) There is need now for a review of the national accounts, particularly the national income and product accounts. Even if the present version of the national income and products accounts, which has remained virtually unchanged since 1947, were as nearly perfect as such estimates could be at the time the system was set up, there would be ample scope now for a thorough exemaination.

First, since 1947 an important branch of the national accounts, the flow-of-funds statement, has been newly developed and another one, the input-output table, has been considerably expanded but later dropped. Although official estimates of national and sector balance sheets are still missing, with the exception of agriculture, enough work has been done in this field during the last decade by individual students that this aspect of the national accounts can no longer be regarded as existing in the imagination only. The development of these new branches of national accounting poses an integration problem that did not exist in 1947.

Secondly, considerable progress has been made in clarifying the conceptual basis of the national accounts and in settling some of the problems, though others remain as intractable as ever. Fortunately the state of the discussion has been summarized in a series of papers prepared for a meeting of the Conference in Research in Income and Wealth held in the fall of 1955.[3]

Thirdly, some important sectors of the national accounts, particularly saving, inventories, and capital expenditures, have been thoroughly investigated recently by consultant committees organized by the Federal Reserve Board.[4] Their operation has permitted the committee somewhat to limit the scope of its own activities.

Finally, considerable progress in the field of national accounting has been made in several foreign countries and in international organizations. Thus there now exists abroad an accumulated body of experience from which we may well profit, even though our own system of national accounts is still the equal of that of any other country if considered as a whole.

The advent of electronic accounting, which promises to spread rapidly to most large business and Government organizations, poses a whole new set of problems. To what extent the potentialities of electronic accounting will be utilized for the national accounts is one of the most important questions in this field with which economists and statisticians will have to deal in the near future.

(*b*) National accounts have acquired increasing importance for economic policy, for business, for labor, and for economic science during the last two decades. Their impact may be expected to grow as the potentialities as well as the limitations of national accounts become even better known. As the burden put on national accounts by different groups of users increases, so must the reliability and the flexibility of the system.

(*c*) The methods of business accounting provide a point of departure for a system of national accounts in an economy in which, as is the case in the United States, business enterprises account for a decisive part of economic activity. However, national accounting, particularly in the consumer and Government sectors, need not follow the business accounting conventions of the day in every detail or even in all major features. National accounting is entirely within its rights in selecting among alternative methods used by business accounting the one which appears most adequate for its primary purpose—to provide a systematic record of economically relevant facts. National accounting may even go further and, where economic analysis requires, adopt methods which differ from all alternatives in use in business accounting.

(*d*) The national accounts are best regarded as an integrated framework for the systematic organization and presentation of economic information that can be expressed in dollars. Their main value is that of a tool of economic policy, possibly the most important factual tool that economic analysts and policymakers in Government, business, labor, and universities now possess.

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[3] The proceedings of this conference which were available to the committee in mimeographed form will be published early in 1958 by the National Bureau of Economic Research as vol. 22 of Studies in Income and Wealth.

[4] Reports of Federal Reserve Consultant Committee on Economic Statistics, hearings before the Subcommittee on Economic Statistics of the Joint Committee on the Economic Report, 84th Cong., 1st sess. (1955).

(*e*) The development of an integrated system of national accounts—encompassing Government budgets, national income, and products accounts; flow-of-funds statements; the balance of payments; an input-output table, and a national balance sheet—should be a goal of all national accounting work. Although this integrated system can only be developed by steps, can be expected to be completed only many years from now and will not cover every detail of all its components, it should remain a declared and acknowledged goal nevertheless.

(*f*) Flexibility is a prime requisite of an efficient system of national accounts because of the variety of important requirements of different groups of users of the national accounts, and of the necessarily conventional and sometimes arbitrary nature of some of the definitions and procedures adopted. The means that the system must be so set up that it provides alternative figures where there is a reasonable demand for them. The treatment of expenditures on consumer durable as consumption or saving, the use of either original cost or replacement cost depreciation, the inclusion of capital gains and losses in personal income, the separation of imputed items, and the elimination of seasonal variations are examples of situations where estimates on different bases should be available to users.

(*g*) While recognizing that the specific form of our system of national accounts will always be influenced by its origins and by the peculiarities of the primary data available in this country, we should conform to international usage wherever this can be done without substantially reducing the value of the system for domestic use and where the obstacle to conformity lies primarily in features of our system which may be explained by historical accident. Such an attempt to conform with international usage should not, and need not, prevent us from trying to keep the United States system of national accounts at the top in international comparison with respect to conceptual structure, detail, reliability and up-to-dateness.

(*h*) The committee has tried to provide in this report a roadmap for national accounting during the next 5 to 10 years, rather than to conduct an item-by-item audit of the present estimates, particularly the national income and product accounts of the National Income Division. This decision is the result both of choice and expediency. The committee was unanimous in its conviction that in the present situation the development of an integrated long-range program was more important than a detailed examination of the adequacy and the reliability of the estimates now available. This conviction was strengthened by the impression—gained admittedly without thorough item-by-item study but reflecting many years' experience in the field by most of the members—that these estimates were by and large as good as the sources of information now available permitted so that a detailed audit was not likely to reveal shortcomings not already known to the estimators or to careful users of the figures. But even if the committee had rated the need of a detailed audit of our present national accounts higher, it could not have undertaken the task. The conduct of such an audit—apart from calling for a different committee membership—would have required a much longer period of study than was assigned to the committee; would have presupposed the employment of a substantial full-time staff which the committee did not have; and, in view of the staff shortage of the

National Income Division, would have seriously interfered with the preparation of the current national income and product estimates.

(*i*) The report is necessarily selective. The national accounts, or even the national income and products accounts only, cover such an immense territory in terms of economic statistics and of conceptual problems that it would have been impossible for the committee—whose members could devote to this work only part of their time during a period of half a year—to investigate every aspect of the accounts. It may suffice to recall that two of the Federal Reserve Board's consultant committees—those on saving and inventories—spent approximately as much time on their two fields which constitute only relatively small sectors of the national accounts, as this committee could expend on its entire survey. In selecting the subjects on which the committee has concentrated its attention, the committee has, of course, selected aspects of the national accounts which it regarded as particularly important and as offering the chance of substantial improvement during the next decade. The specialized knowledge and experience which some of the members have in specific fields of national accounts also had some influence in guiding the committee's choice. This report, it needs to be emphasized, thus is not a treatise on the national accounts.

(*j*) The review of the national accounts is better regarded as a continuous, or at least a periodic, rather than a one-time affair. The requirements of the different groups of users as well as the possibility of tapping new sources of data change with sufficient rapidity to call for some arrangement which will insure that the actual form and content of the accounts is at all times sufficiently responsive to the needs of the users and is making full use of the potentialities of the data. Continuous review is also indicated by the unavoidable monopoly position which the Federal Government has acquired in the field of national accounting as the subject has become too large for the sporadic efforts of individual students or economic research organizations.

(*k*) Although it is making a large number of suggestions for extending and improving our national accounts, the committee wants to state as clearly and emphatically as possible that these suggestions are not a reflection on the competence or the diligence of the organizations that have been working in this field, particularly the National Income Division of the Office of Business Economics in the Department of Commerce. The experts in these organizations are well aware of most of the shortcomings of the present accounts, both conceptual and statistical, and would probably support a large proportion of the recommendations made in this report. The comprehensive paper by George Jaszi on The Conceptual Basis of the Accounts: A Reexamination in volume 22 of the Studies in Income and Wealth has been extremely helpful to the committee in its consideration of the many problems which we discuss.

(*l*) The committee is fully aware that the recommendations it is making will cost money. Even the present scope of national accounting work within the Federal Government could not be maintained for long unless additional funds were forthcoming, since the present level of output in this field has been possible only at the cost of "undermaintenance," a process which cannot be continued indefi-

nitely. A decision clearly must be reached in the not too distant future by the administration and by the Congress regarding the importance of an adequate system of national accounts for Government, for business, agriculture, and labor, and for economic research purposes. If the importance and potentialities of such a system are anywhere near what the committee believes them to be after a fairly exhaustive survey of the uses that are or could be made of the national accounts, a substantial increase in the funds spent on national accounting work by the Federal Government is required and is fully justified even under the strictest requirements of economy compatible with efficiency in Government. As in other fields one gets only what one pays for.

If the administration and the Congress want to continue the process of slow but continuous reduction in the resources devoted within the Government to national accounting work, that has taken place during the last 5 years or so, they should face the fact that it will be impossible to carry out any of the more important improvements in the national accounts suggested in this report. Even the present scope of the work, which admittedly is not unsatisfactory, has been made possible only by neglect of repair and maintenance in the national income and product accounts, and by reliance on funds provided by semi-independent agencies (like the Federal Reserve Board), by nonrecurring special defense projects or by private research agencies. It is unreasonable to expect that the expansion and development and particularly the integration of our system of national accounts can be financed in the same way for another decade. Unless the allocation of Federal funds to the field of national accounting is considerably stepped up within the next few years there is serious danger that the scope of the work will have to be narrowed considerably or that its quality will deteriorate, and that the United States will lose the leadership in this field which it has held during the 1930's and 1940's and is still holding at the moment. It is the users of the national income and product accounts and related statistics in business, labor, agriculture, and Government who would be the primary sufferers from such a development and who would suffer from it in terms of less reliable and less adequate data on which to base their policy decisions than are available now or could be available to them with relatively modest additional effort and expense.

Chapter IV. Present Status of National Accounts

This very brief review of the present status of national accounting in the United States and abroad is intended only as a means of providing readers not familiar with the field with a minimum of background information that should be useful in understanding the discussion in the chapters that follow. The description is necessarily more detailed for the United States than for foreign countries.

1. United States of America

The chief characteristic of national accounting work in the United States, particularly in comparison with other countries—apart from the richness of detail—is decentralization.

First, work on each of the four main components of a system of national accounts—national income and product, flow-of-funds statements, input-output tables, and national balance sheet—is done by different organizations. Since their inception as Government projects, the national income and products accounts have been in the hands of the Office of Business Economics of the Department of Commerce; the flow-of-funds statements have been compiled by the Board of Governors of the Federal Reserve System; and input-output tables have been prepared by the Bureau of Labor Statistics and some defense agencies.[5] No systematic work on balance sheets has as yet been done in the Government.

Secondly, the National Income Division of the Office of Business Economics in the Department of Commerce, which is in charge of preparing the national income and product accounts, does not produce or control any of the primary statistics that go into the estimates. The Division is rather in the position of a mosaic worker who puts together the picture which he has conceived with the help of those stones which he can secure from other workmen that most nearly fit his intentions in shape and color. The position of the Board of Governors of the Federal Reserve System and of the Bureau of Labor Statistics in preparing flow-of-funds statements and input-output statements is quite similar. They also assemble materials most of which they do not collect or control.

(a) National income and product accounts

The history of national income statistics in the United States, so far as it is relevant here, begins with the estimates made by the Department of Commerce, in cooperation with the National Bureau of Economic Research, under the direction of Simon Kuznets, pursuant to a Senate resolution passed, rather significantly, in 1932, at the depth of the great depression. The resulting report, entitled "National Income 1929–32," was published early in 1934 and was continued 2 years later by National Income 1929–35, which was prepared under the supervision of Robert R. Nathan. For more than a decade, these two reports provided the framework for our national income estimates—at that time the only component of the national economic accounts regularly prepared within or outside the Government. In view of the large amount of information now available in this field, it is easy to forget that these reports were limited to annual estimates of national income—i. e., they entirely omitted national product—and that they contained estimates only for 8 forms of income for each of 12 main industrial divisions and generally also for about 3 dozen subdivisions.

All the official national income estimates of the United States have been prepared by the Department of Commerce, since 1937 in a separate National Income Division; but Simon Kuznets continued to take a leading role in the development of concepts and methods of analysis even after abandoning estimation of current figures with the publication in 1941 of his fundamental National Income and Its Composition 1919–38. Indeed, even today, the structure of the na-

[5] Much of the work done on input-output tables in the Defense Department is classified, including work done for the Department 5 years ago. The committee does not see the reason for the maintenance of classification on experimental work done so long ago. Because of lack of information, the committee has not included the input-output work of the Defense Department within the purview of the committee's activities.

tional income and product accounts, notwithstanding the very important changes made in the original design, still bear the imprint of Simon Kuznets' pioneering work. Their development was considerably assisted by the professional discussion at the annual meetings of the Conference on Research in Income and Wealth, which started in 1936 and are still being continued.[6]

The accounts as we know them today developed in the Department of Commerce under the direction of Milton Gilbert, George Jaszi, Edward F. Denison, and Charles F. Schwartz. During World War II, the original national income accounts were expanded and substantial progress was made toward the development of a comprehensive and interlocking system of accounts, until they approach fairly closely the form in which they have been presented since 1947. Even before this major reform, several additions had been made by the National Income Division to the rather summary estimates of national income available in published form since 1934. A monthly series of personal income payments was initiated in 1938, running back to 1929; State income estimates were published beginning in 1939; quarterly estimates were started in 1942, going back to 1939; and gross national product estimates were also added during World War II.

The structure of the national income and product and related accounts introduced by the 1947 reform—all of which was carried back to 1929 on an annual basis and to 1939 on a quarterly basis—is the one still in force and constitutes the basis of much of the discussion in this report. The most important changes and additions made in connection with the 1947 reform included—the recasting of the estimates into an accounting frame, which they did not previously possess; expansion of the estimates to cover both national income and product, with a vast amount of detail on both sides of the accounts; and the publication of data for a considerably larger number of industrial divisions and by legal form of organization. The entire system was first described in detail, along with the sources of data and a summary of the methodology, in National Income, 1951 edition, and a slightly enlarged version was published 3 years later in National Income, 1954 edition. This latter volume is still the most comprehensive statement published in any country on the conceptual and statistical foundation of the official national income and product estimates.

Although the basic structure of the accounts has not changed, several additions to the information regularly published by the National Income Division have been made since 1947. Perhaps the most important of these are: deflated annual gross national product, by major categories of expenditures, first published in 1951; a complete revision, released in 1954, of the State income estimates and a recasting of the estimates in terms of the personal income concept used in the national accounts; and distributions of personal income by income-size classes, first published in 1953.

Though there can be no doubt about the trend in scope and quality of our national income and product accounts, occasional setbacks have not been missing. Instances of retrogression are fortunately rare, and these are due entirely to the fact that the underlying statistics have deteriorated in some respects. For example, it has been neces-

[6] See Studies in Income and Wealth, vols. 1, 1937, to 22, in press, published by the National Bureau of Economic Research.

sary to abandon the classification of expenditures on producer durables by type. On balance, however, there is no question that the coverage and the detail of the national income and product accounts have been greatly enlarged since they were started a quarter of a century ago; and that there has been a considerable improvement in the reliability of the figures published.

(*b*) *Flow-of-funds statements*

Morris Copeland's pioneering work [7] provided annual flow-of-funds statements for the years 1936–42. The Federal Reserve Board's basic document [8] contains detailed annual estimates for 1939–53. These figures differ sufficiently from Copeland's estimates to prevent their being used jointly without special adjustments. Somewhat less detailed annual figures for 1950–55, showing however all essential magnitudes for the 10 main sectors,[9] have been published in the April 1957, issue of the Federal Reserve Bulletin. The detailed tables, comparable to those in Flow-of-Funds in the United States 1939–53 will be available in mimeographed form so that analysts will have at their disposal a detailed continuous set of figures covering a period of 17 years.

In recent years simplified flow-of-funds statements, mostly limited to the main types of financial transactions, have been prepared by financial analysts interested in current figures and short-term forecasts of fund flows, since no Federal Reserve Board figures extending beyond 1953 were available until recently. These statements often provide semiannual and even quarterly estimates. The statement prepared early each year by the Bankers Trust Co. is probably the best known of these simplified statements of financial fund flows. The most ambitious of the unofficial projects in this field is the quarterly statement of flow of funds through the capital markets for the years 1953–55 which has been prepared by the National Bureau of Economic Research as part of its Postwar Capital Markets Study and which is expected to be published, at least in summary form, some time next year.[10]

(*c*) *Balance-of-payments tables* [11]

Official [12] statements of payments and receipts between the United States and foreign countries, covering trade in commodities as well as all other types of international transactions, have been published on an annual basis since 1922 and have increased in detail and reliability as time went on. Quarterly statements have been publicly available beginning with 1945. Until 1946 only aggregates for transactions between the United States and all foreign countries together were published.[13] In recent years a detailed breakdown has been

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[7] A Study of Moneyflows in the United States, 1952.

[8] Flow-of-Funds in the United States 1939–53, December 1955.

[9] Consumers, corporations, nonfarm unincorporated business, farm business, Federal Government, State and local government, banking, insurance, other investors, rest of the world.

[10] For a description of this project see 36th Annual Report of NBER, pp. 54–57 and 37th Annual Report, pp. 34–39, and article by M. Mendelson in Journal of Finance, 1957, pp. 139–166.

[11] Although the committee did not regard a specific study of balance-of-payments statistics as falling within its purview, the brief summary is included here to complete the review of all segments of the national accounts.

[12] Of earlier unofficial statements mention should be made at least of The Balance of International Payments of the United States for the Year 1920 With a Statement of the Aggregate Balance July 1, 1914–December 31, 1920, by J. H. Williams in the Review of Economic Statistics, vol. III, 1921, which may be regarded as the pioneering effort in this field.

[13] Data by periods back to 1940 were however released in 1947 in International Transactions of the United States During the War.

presented separately for 10 countries or regions. Both the annual and the quarterly balance-of-payments tables are now being published regularly in the Survey of Current Business—for example in the issue of March 1957.[14] All official balance-of-payments tables are prepared by the Balance of Payments Division of the Department of Commerce which utilizes, in addition to data specifically collected by the Division, foreign-trade statistics and other data from other Federal agencies. Discussion of the balance-of-payments tables in this report is restricted to the problem of integration with the other segments of the national economic accounts, particularly the foreign trade and payments account in chapters V and VII, section 4.

(d) Input-output tables

Input-output research is a newcomer in the family of national economic account tabulations. It started only about two decades ago with the theoretical and experimental work of Wassily Leontief; found its first large-scale application in the preparation of the 1947 input-output table by the Bureau of Labor Statistics; and has been recently adopted in a number of foreign countries. This segment of national accounting work is discussed in chapter XIII.

(e) National balance sheets

In the early attempts at developing aggregates intended to reflect the economic situation, well-being and potential of a country, about equal attention was devoted to national income and national wealth estimates. In recent decades work has been virtually limited, at least in official statistics, to national income and its development into a system of national economic accounts.

Only recently a parallel development has begun with respect to national wealth. Recognition of the limited usefulness of an aggregate national wealth estimate led to emphasis on the breakdown and composition of national wealth rather than on the total. It was particularly the work of Raymond Goldsmith which developed from this starting point the notion of a national balance sheet as an integral part of a system of national economic accounting.[15]

2. OUTSIDE THE UNITED STATES

The development of national accounting outside the United States received a decisive impetus from three forces: the obvious usefulness of the approach in administering a war economy; its adaptability to aggregative, particularly Keynesian, economics which acquired increasing influence among economists in the 1940's; and the example of the United States. Britain, largely under Lord Keynes' direct guidance, became the first country to publish a set of national income and product accounts in modern form—this happened in the White Paper of 1941—and to allocate to the figures an important role in shaping economic and monetary policy, both during the war and in the transition to the peacetime economy.

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[14] A detailed description of concepts, methods, and sources of the balance-of-payments tables, which is still essentially valid, may be found in Balance of Payments of the United States, 1949–51.

[15] See his paper, Measuring National Wealth in a System of Social Accounting in Studies in Income and Wealth, vol. 12, pt. I, National Bureau of Economic Research, 1950, and the actual estimates in his A Study of Savings in the United States, vol. III, 1956, and in 37th Annual Report of the National Bureau of Economic Research, Inc., the latter of which is reproduced in appendix G.

The international spread of regular national income and product estimates in the decade after World War II was phenomenal. It is doubtful whether any equally important statistical innovation ever gained ground as rapidly on an international scale. The movement was accelerated, and to some extent guided, by international organizations, particularly the United Nations and its regional commissions (Economic Commissions for Europe, Latin America, and the Far East) and the Organization for European Economic Cooperation) which induced members to adopt a system of national accounts; to some extent standardized the system and thus facilitated its adoption; and helped to introduce it in countries short of indigenous experts. Additional influences, possibly of a more tangible nature, were the facts that national income and product and other figures from the national accounts were used for operating decisions by some international organizations, for instance in determining membership dues for the United Nations; and that they played a role in influencing the direction and size of international aid and loan programs.

As a result by 1956 about 60 countries were regularly preparing estimates of national income and product [16] compared to only about 2 dozen countries who did so 10 years earlier and only a handful who regularly published similar estimates before 1940.

The characteristic features of the more advanced foreign national accounting systems, primarily of those used within the British Commonwealth and by countries in the Organization for European Economic Cooperation, are visible from the comparative table given in appendix D which was prepared for the committee's use by the Statistical Office of the United Nations. It may therefore suffice to compare these foreign systems, without having any specific one in mind, with the national income and product accounts of the United States with respect to the conceptual structure, the administrative organization, the detail published, and the quality of the estimates.

As far as the conceptual structure of the system goes several foreign countries seem to have drawn ahead of the United States, at least if the development of an integrated system of national income and product and moneyflow accounts with substantial institutional sectoring is regarded as a step forward. Such a system is now in existence, or in active preparation, at least in Norway, Denmark, the Netherlands, France, Germany, and Canada. It is fair to add, however, that in several cases the figures are still very rough, possibly rougher than would be regarded as acceptable in this country. There is no doubt that a number of countries are ahead of the United States in having a capital account for each sector, including the Government.

It is probably in administrative organization that national income work abroad differs most pronouncedly from that in the United States, partly because most foreign countries have a centralized statistical system under which most basic statistics are collected by one Government office. In Canada for example, the central office is the Dominion Bureau of Statistics. As a result of this administrative centralization of statistics, not only are national income and product accounts and balance of payment statements done under the same roof as flow-

[16] This is the number of countries for which current estimates of national income in 1954 or 1955 are shown in United Nations, Statistical Papers H–10 (April 1957) and does not include the U. S. S. R. and its satellites.

of-funds statements and input-output tables—wherever such documents are prepared, but the organization which assembles the national income and product estimates also has control over most of the primary data which go into these estimates. In such a situation it is obviously much easier to cast the primary data into a form suited to the national accounts, than when the recasting has to be done by an independent organization even where there exists a coordinating agency, like the Office of Statistical Standards of the Bureau of the Budget.

The national accounts of the United States provide considerably more detail with respect to industrial divisions and to commodities than those of any other country. On this point the United States is still well ahead, reflecting its more developed system of primary statistics.

It is extremely difficult to compare the quality of the national accounts in different countries. Statistical experts who are familiar at first hand with the national accounts both of the United States and a number of foreign countries, have however no hesitation in rating the quality of the American estimates very high and in asserting that their quality is above that as yet attained in any foreign country. Those members of this committee who have had personal experience with the national accounts of foreign countries are inclined to agree with this evaluation.

8. ORGANIZATION OF NATIONAL ACCOUNTING WORK WITHIN THE FEDERAL GOVERNMENT

As the directive guiding the Committee's operation did not include the organizational and administrative aspects of national accounting in the United States, the Committee has only a few suggestions to offer which have come up in connection with other facets of its study. All these suggestions could be implemented immediately or in the very near future, and the first one is in the Committee's opinion of crucial importance for the development of national accounting work in the United States.

(*a*) *Enlargement of National Income Division*

The National Income Division should be considerably enlarged, both at the professional and clerical level. Increases in the staff of the National Income Division are essential and urgent and we shall revert to this point repeatedly throughout the report.

(*b*) *Research Section within National Income Division*

Within the National Income Division a small research section should be set up that can devote itself to the longer range problem of national accounting. The committee is impressed by the fact that Simon Kuznets, who was responsible for the first official national income estimates in the United States and probably has contributed more to the development of this field than anybody else, regards this as the most important recommendation with respect to the organization of national income work. In a memorandum submitted to the committee, he argued that: "The need for a research unit within the National Income Division, as a group of people who would be well versed in the field and yet free from compulsion and responsibility of continuous reporting, seems acute. * * * The research unit must be

set up in such a way that it has access to all the information, and can acquire experience by participating in the labors of estimation, and yet be free to experiment on its own."

(c) *Liaison between National Income Division and Flow-of-Funds Section of Federal Reserve Board*

Continuous liaison should be established between the National Income Division and the Flow-of-Funds Section of the Federal Reserve Board. There is already substantial informal contact between the two divisions, but it should be strengthened and formalized. In particular, arrangements should be worked out under which the data on flows of current income and product used in the Federal Reserve Board's flow-of-funds statements are prepared by the National Income Division. It may not always be possible to use in the flow-of-funds system as now set up exactly the same figures which appear in the national income and product accounts. But if two sets of estimates for the same, or closely related items, must coexist because of conceptual differences in the two systems, the figures should be prepared by one set of estimators, preferably the one which has more detailed and continuous experience in the field.

(d) *Administrative coordination*

The three recommendations just made are for immediate implementation. There exists, however, in this field a more basic problem—that of administrative coordination and integration of work on the national economic accounts. This problem is one the satisfactory solution of which will take much time and requires much more thorough study than the committee has been able to give it. Nevertheless it is of such importance for the long-term development of the national economic accounts that it cannot be altogether ignored in a report such as this.

The committee has little doubt that as far as collection of basic statistical data is involved, decentralization is here to stay. This means that, as before, the national economic accounts will have to be built up from primary statistical data which are collected by numerous independent agencies, to name only the more important ones without attempt at ranking: the Bureau of the Census; the Internal Revenue Service; the Bureau of Labor Statistics; the Department of Agriculture; the Federal Reserve Board; the Federal Trade Commission; the Securities and Exchange Commission; and the Department of Health, Education, and Welfare. The problem of influencing the collection of these basic statistics so as to make them fit as well as possible into the system of national economic accounts will thus continue to be with us. Indeed it will become more acute as the scope of national economic accounting expands and as its accuracy requirements are given increasing attention. On this point the committee has no suggestions to offer since it is not called upon nor qualified to deal with the problem of coordination of statistics within the United States Government. The committee believes that the Office of Statistical Standards of the Bureau of the Budget should use to the full its statutory authority in inducing the agencies producing the primary statistics used in national economic accounting to take account in their plans of the needs of the integrated system proposed in this report.

It is essential that at the summary level a single integrated system of economic accounts be published at regular intervals in a single publication. In order to achieve this, it is recommended that the responsibility for preparing and publishing the summary integrated national economic accounts be concentrated in one spot within the Federal Government. Integration of the various segments of the national economic accounts should not be allowed to restrict the activity of those groups working with the detailed information and thus hinder the evolution of these individual segments. It is recognized that changes must take place if there is to be improvement, and these changes may from time to time impair the comparability among the various segments.

The committee is not concerned with the administrative arrangements which such a process of concentration requires. Nor is it interested in the specific location of national accounting work within the Federal Government, or in the question how independent the designated organization ought to be from departmental supervision. The committee believes that it is important that competent staff economists and statisticians specializing in national economic accounting be close to the makers and advisers on economic policy—such as the Council of Economic Advisers, the Joint Economic Committee, the Federal Reserve Board and the Treasury Department. The specialists should serve as a link between the group responsible for the overall national economic accounts and those who will use them in the formulation of economic and fiscal policies.

The committee, finally, does not regard it as either necessary or feasible to indicate in detail exactly where the responsibility of the coordinating agency ends, e. g., which of the estimates in the detailed accounts should actually be made by the coordinating agency itself and which it should only supervise or advise upon. Again a statement of the general principle that should apply must suffice. On the most general level the coordinating agency should not only set the framework and lay down the rules, but should actually prepare the estimates in the summary tables by itself in close cooperation with other specialized agencies. The tables outlined in appendix A and B give a fairly good idea of the field covered by this recommendation. The detailed elaboration of the segments of the national economic accounts other than the income and product accounts might, however, be left to specialized statistical agencies. This applies primarily to flow-of-funds statements, input-output tables and balances of international payments. There the coordinating agency may limit itself to insuring that the more detailed statistics fit conceptually and quantitatively into the integrated overall framework.

It is usually easier to make the appropriate administrative decisions when the work to be allocated has not yet been appropriated by an existing organization and vested interests are as yet weak. Within the field of national economic accounts this is the case only for national balance sheets. If by the time they become a regular feature of the Federal Government's work on the national accounts, the national income and product accounts and the flow-of-funds statements are in the hands of the same organization no problem will arise. Meanwhile there is, it seems to the committee, a natural division of responsibility, which would make best use of the specialized knowledge and contacts

of the different Federal agencies now involved in national economic accounting: Tangible assets would be handled by the agency in charge of putting together the national income and product accounts (now the National Income Division), while intangible assets and liabilities would be the responsibility of the agency preparing the flow-of-funds statements (now the Federal Reserve Board). The separation of work on one relatively small sector, agriculture, does not have much to recommend itself in principle, but is probably unavoidable as a practical matter and is not likely to lead to serious problems of integration.

Chapter V. Objectives of National Economic Accounts and Their Implications for the General Form of the Accounts

1. Current forms of national economic accounts

The term "national economic accounts" is currently used to refer to a number of bodies of systematically arranged statistical data which have as their focus the economic activities taking place within a nation. There are at present five such bodies of data, treating different aspects of the Nation's economic activity. These are the national income and product accounts, the input-output table, the flow-of-funds statements, the balance of payments, and the national balance sheets.[17]

(a) National income and product accounts

National income and product accounts are concerned, as the name implies, with income and product transactions. They are designed to show in monetary terms the current productive activity of the economy, distinguishing the current income and outlay associated with specific kinds of economic activities: production, consumption, and investment. They thus consolidate by economic activities the sort of information contained in the profit and loss accounts of enterprises and the budgets of consumers and government.

(b) Input-output tables

Input-output tables are also concerned with the current productive activity of the economy, but they focus on interindustry relationships, rather than on income and product transactions. Input-output tables, which are usually arranged in the form of a square from-whom to-whom tabulation, classify industries according to the nature of the processing activities in which they engaged. Information is provided on the inputs from other industries and sectors that are utilized by each industry, and on the utilization of the output of each industry in other industries and sectors.

(c) Flow-of-funds statements

Flow-of-funds statements cover all money and credit transactions in the economy; they thus deal with financial as well as income and product transactions. They provide information on the extension of bank credit, the purchase of securities, and other changes in the assets and liabilities of the different sectors of the economy, as well as on the payments and receipts of income. In contrast with input-output

[17] A more detailed discussion of flow-of-funds statements, input-output tables, and national balance sheets will be found in chs. XII to XIV. The development of national income and product accounting has already been sketched in ch. IV.

tables, flow-of-funds statements divide the economy into institutional sectors—corporations, unincorporated enterprises, banks, insurance companies, and so forth—rather than into processing industries. Flow-of-funds statements thus are intended to show the financial transactions of various groups in the economy, rather than the physical transformation relationships.

(d) Balance-of-payments tables

Balance-of-payments tables embrace on the one hand the international trade statistics, classified by country of origin and destination and by commodity, and on the other hand foreign financial transactions. The classification of commodities tends to be a cross between the industrial breakdown used by input-output tables and the end use breakdown adopted in national income and product accounting. In treating financial transactions, however, the classification system of the balance of payments bears a strong resemblance to that of flow-of-funds statements.

(e) National balance sheets

National balance sheets show the assets and liabilities of different sectors of the economy. They are closely related to flow-of-funds statements, except that they deal with stocks rather than flows. They are concerned with both the tangible and intangible assets of the economy and the liabilities and equities arising therefrom. National balance sheets ordinarily deal with the same institutional sectors as flow-of-funds statements, since these are the sectors that hold financial assets and liabilities. In addition they must sometimes also deal with the stocks of plant and equipment and with inventories of the various processing industries distinguished in input-output tables.

2. NATIONAL ECONOMIC ACCOUNTS AND THE FORMULATION OF ECONOMIC POLICY

National economic accounts are useful in the formulation of economic policy primarily because they constitute a systematic record of basic information about economic activity, presented in such a manner that it is usable for carrying out meaningful economic analysis. This of course does not mean that there are specific formulas that can be applied to the national income accounts to yield solutions to all economic problems. The situation is more nearly analogous to the use of accounting by the typical business firm. Accounts are necessary for the intelligent operation of a business firm; unless a manager knows about the costs, sales, and financial condition of his firm, he is in no position to put well-designed policies into effect. But an adequate set of accounts does not by itself guarantee the success of the firm; there are no magic rules the manager can apply to his accounts to solve all the problems he faces. For policies of the firm to meet with success, they must be based on an intelligent appreciation of what has happened in the past as recorded in the accounts, but they must also have behind them the creative ability and judgment of the policymakers. In similar manner, the analysis of national economic accounts and of projections based on them is necessary for the formulation of successful economic policies, but the accounts are not the only ingredient required.

There are three principal types of questions about overall economic policies for which the national economic accounts are useful. (1) Is the policy which is being considered capable of being achieved in terms of the availability of resources? (2) How does the policy affect the operation of the economy in terms of prices, output, and employment? (3) What is the net effect of the policy in quantitative terms? Each of these types of questions will be examined briefly.

(a) Economic policy and the availability of resources

Perhaps the majority of economic policies are partial, in the sense that they deal with only 1 sector or 1 industry in the economy, and implicitly assume that the rest of the economy will automatically adjust to changes in that sector. An adequate evaluation of the usefulness of such a policy, however, requires some idea of the extent of the adjustment that will have to be made in the rest of the economy. For this reason one test of a partial economic policy is the examination of how it fits into the framework of available resources. It might seem that almost any policy that advocates increased output somewhere in the economy is basically a good policy, since an increased supply of goods and services is a desirable goal. But when the problem is considered in the context of the potentially usable resources in the economy, it is apparent that advocating an increase is one particular industry is equivalent to declaring that it will be more beneficial to use additional resources in this industry than in any other. In other words, such an economic policy, either consciously or unconsciously, involves a decision about which use of resources among all possible uses is preferable, a question which can be answered only after a standard of preference has been agreed upon. For a valid defense of a particular policy it would be necessary to show what resources would be needed to carry it out, from what part of the economy such resources could be obtained, and why this particular use would be more preferable to alternative uses of these same resources in other industries. The national economic accounts are probably the best tool yet developed to assist in answering these questions.

(b) Economic policy and the operation of the economy

Economic policies that are well within the capabilities of an economy in terms of resource allocation can still have unfavorable effects upon the operation of the economy. For instance, badly designed economic policies can result in serious inflation or deflation. For this reason it is necessary to give careful consideration to the relation of any proposed policy to the actual functioning of the different sectors of the economy, for example, its effect on consumer income and consumer expenditures, on tax receipts, on the manner in which the incentive to invest may be affected, and even on the credit structure of the economy. The framework of national economic accounts is capable of making explicit many of the economic interrelations and effects involved, and is therefore a valuable tool for the analysis of such problems.

(c) Economic policy and its quantitative effect

The final question that must be considered is that of the actual results an economic policy can be expected to achieve, in terms of the goals of the society. National economic accounts obviously can never

give a complete answer to this question. The welfare of individuals cannot be measured in terms of a few summary statistics. There are many nonquantitative ingredients—such as working conditions, freedom of opportunity, and the moral and political temper of the country. But the information in the national economic accounts can and does shed light, in considerable detail and in systematic form, on what is happening to the output of the economy. This information, even though it is by no means a complete basis for evaluating any policy, is very much needed as a gage of the performance of the economy.

A policy cannot be advocated solely on the ground that its expected result would be beneficial. The result must be shown to be quantitatively great enough to warrant the risks involved. No action requiring an estimate of the future is entirely without risk. Businessmen are constantly faced with the problem of choosing between those policies which have an excellent prospect of making a small gain and those policies which involve greater risk but also a possibility of correspondingly larger gain. Policies which have a large degree of risk attached to a small possible gain are naturally excluded from any reasonable consideration. In like manner, the expected results of an economic policy need to be estimated in quantitative terms in order that the possibility of gain may be weighed against the risk and cost of failure. The national economic accounts again are a device that can provide some of the basic information needed to make decisions of this type intelligently.

(d) The use of national economic accounts by business and labor

Both business and labor organizations also make considerable use of national economic accounts information as an aid in decision making. There is considerable parallelism between the uses of national economic accounts in relation to economic policy described above and the uses of this information by business and labor organizations for shaping their own individual policies, but there are two marked differences in point of view. First, individual business and labor organizations are rarely large enough to need to take into account the repercussions which their particular activities will have on the economy as a whole; they are therefore primarily interested in the national economic accounts as a description of the economic environment within which they operate. Second, the scope of the problem for which the national economic accounting information is used differs. Problems of economic policy usually require a rather broad perspective showing how different groups in the economy are benefited or harmed, and what net result can be expected from an overall social point of view. But in the use of national economic accounts by business and labor, the focus is apt to be much narrower; attention is directed to the effect of a given action on markets, profits, or the return to labor within the particular economic unit.

National income accounting has come to be one of the major tools of the economists of business and labor organizations in describing the economic environment. The quarterly tables of national income data and the monthly series on personal income are particularly useful in this connection. These data provide a comprehensive record of what is taking place in the economy, and on the basis of this record it is possible to explore the implications of current developments in the economy as a whole for the future operation of the business or labor organization concerned.

The narrower uses of the national economic accounts data by business and labor organizations are usually concerned with the analysis of the demand for the products of their industry. Although the information in the national economic accounts is generally not sufficiently detailed to be used in direct demand analysis for a specific product, it does depict the development of demand and supply for broad categories of goods and services. Such information can serve as a useful frame of reference for specific demand analysis. Even where the industry has more detailed information concerning its own development, the data on competitive or complementary industries contribute to a better understanding of the factors operating on demand. The data on capital expenditures in various industries are not only useful for the capital goods industries themselves; they show where expansion or technological change is occurring. When the information in the national income and product account is tied into balance of trade data, it becomes possible for the analysis of demand to take foreign markets into account. The inventory data give information on the relationship between current production and sales, and indicate the supply of goods of various kinds that the economy has on hand to satisfy demand in the following period.

For both the broader and narrower purposes, business and labor economists, like other economists interested in evaluating economic policy, often make use of forecasts of the future and projections based on varying sets of assumptions. For instance, business or labor decision making frequently involves forecasts of productivity changes, not only in the immediate industry but also in related industries. The national economic accounts provide one of the frameworks for such projections, a framework which is particularly valuable because it is integrated and articulated and hence to some extent prevents the estimator from making errors due to myopia. Decision making genrally operates within a context where some elements must be assumed—for instance, rules regarding the depreciation that may be charged for tax purposes, or the level of corporate taxes. If these are changed, the decisions that businessmen would make would often be changed. Similarly, a sudden increase or decrease in the level of defense expenditures, or the restriction of building through a tight money policy, would have repercussions that business and labor organizations must evaluate. The national economic accounts provide a framework for making alternative projections under a variety of assumptions about conditions in the future. They thus enable business and labor to judge in the face of uncertainty whether their policies will be satisfactory, not for just one set of circumstances, but for a variety of different possibilities.

To date, business and labor economists have made more extensive use of the national income and product data than of other segments of the national economic accounts. There is a growing interest in some of the larger business groups, however, in the use of input-output tables for the analysis of long-term interindustry relationships for investment purposes. Businesses engaged in international trade often make extensive use of the balance-of-payment data. There has been as yet little opportunity for business and labor economists to accumulate much experience with flow-of-funds statements and national balance sheets, but banks, insurance companies, and other finan-

cial institutions are showing considerable interest in the information these branches of national economic accounting provide.

3. THE PRESENT SYSTEM OF NATIONAL INCOME AND PRODUCT ACCOUNTS IN THE UNITED STATES

The national income and product accounts are at present the most widely used general purpose form of national economic accounting as has already been indicated above. National balance sheets are similar in character. On the other hand the input-output table, the flow-of-funds statements, and the balance of payments, present somewhat more specialized information.

In reviewing the state of the national economic accounts, therefore, and in making recommendations for changes, it will be useful to evaluate the present national income and product accounts as the basis of a national ~~income and product accounts as the basis of a national economic~~ accounting system. Such an evaluation will differ considerably from one which would consider the usefulness of the figures shown in the various segments of the national economic accounts. A system of accounts must be judged in terms of its adequacy as a framework for the data and its usefulness in facilitating the presentation and understanding of information. Evaluation of the data, however, is a much broader problem which must be couched in terms of the kind of information provided and its reliability, quite aside from the general form in which it may be presented.

(a) The general form of the accounts

The United States system of national income accounts really has three facets: (1) The formal set of accounts that is presented in summary form annually in tables I to VI of the Survey of Current Business; (2) the annual tables of national income and product data now numbered 1 through 39, which differ considerably in form of presentation from the formal accounts; and (3) the quarterly table of national income and product data in the February, May, August, and November issues of the Survey of Current Business.

The formal accounts are concerned primarily with the derivation of the income and product originating in institutional sectors, rather than with a system of consolidated accounts for production, consumption, and investment. Thus in the present United States system the business account (table II) includes the productive services of corporate and noncorporate enterprises, professional workers such as lawyers and doctors, and the imputed income of owner-occupied housing. But the productive services of domestic servants, teachers in privately endowed institutions, and other employees of nonprofit organizations are included in the personal account (table III). The services of Government employees, such as civil servants, public school teachers, and employees of veterans' hospitals, are shown in the Government accounts (table IV). This fragmentation of productive activities into essentially institutional sectors impedes the usefulness of the accounts for certain aspects of economic analysis. The rest-of-the-world account (table V) suffers from the added disadvantage that it is presented on a net basis, and cannot easily be reconciled with the balance-of-payments account. In consequence, the formal accounts have been very little used for economic analysis. Their major func-

tion to date has been pedagogical: to show how the system is constructed and to provide the rationale for it. But they have deficiencies even from this point of view, since, because of the particular form of sectoring chosen and the accent laid on the derivation of aggregates, a large number of quantitatively insignificant items are required for formal completeness.

The more detailed, though less integrated, Arabic-numbered tables have thus come to be the heart of the United States annual national income accounting system. The information contained in these tables is more complete, and generally in a form better adapted for economic analysis than that contained in the formal accounts. For instance, the Government receipts and expenditures tables (tables 8 and 9) present data in a much more useful form than do the formal accounts. In many of the tables, however, a reordering and regrouping would be an improvement, clarifying the nature of the different items and reducing the appearance of proliferation of items. Here, too, the presentation of the transactions with the rest of the world would be improved if they appeared on a gross rather than a net basis.

The quarterly tables are the most recently developed form of national income and product data. It is interesting to note that in these data the classifications tend to follow lines of economic activity somewhat more closely, and many of the less meaningful items are not shown.

The National Income Division of the Department of Commerce has recognized that a reorganization of the national income and product accounts is in order, and its chief has made concrete proposals to this effect which are summarized in appendix E. Generally speaking, the system toward which he would like to see the national income and product accounts move is some combination of the present quarterly data and some of the basic tables that are now presented in the national income supplement of the Survey of Current Business.

(b) Valuation and imputation

Besides the general form of the accounts, there is also the question of whether the present system of valuation and imputation used by the Department of Commerce is optimal. The valuation problem mainly centers around whether items should be valued at the prices they sell for in the market, or at what they cost in terms of payments to the factors of production. The problem of imputations arises in deciding how far one should go in including production and consumption that occurs outside of the market mechanism.

Generally speaking, the transactions and assets encompassed in most forms of economic accounts are valued at market prices. This is especially true of input-output tables and flow-of-funds statements. With regard to the national income and product accounts, however, an alternative method of valuation enters the picture, factor cost, which conceptually is equal to the valuation at market prices plus subsidies less indirect taxes. Both types of valuation are used in the present accounts—the aggregate labeled "net national product" and its distribution by type of expenditure are at market prices, while that labeled "national income" and its distribution by industry are at factor cost. These alternative methods of valuation reflect the differing uses to which the accounts may be put. Conceivably the two schemes of valuation might be carried throughout the entire accounts;

for example the distribution of national product by type of expenditure might be presented at factor cost as well as at market prices. For most purposes to which the accounts might be put, however, the quantitative difference between the two schemes of valuation would not be of importance, and for this reason the committee does not recommend any change in the present valuation procedure.

Imputations do not play a major role in the United States national income and product account. At the present time the United States national income accounts contain four major kinds of imputations for economically relevant services for which no cash (or credit) payment is made: (1) wages and salaries furnished in kind; (2) rent of owner-occupied dwellings; (3) food and fuel consumed on farms; (4) certain services of financial intermediaries. The total amount of these imputations accounts for only a small proportion of total gross national product—something like 5 percent in recent years—but they are required on the ground of internal consistency in the coverage of the accounts. Unless these imputations were made, spurious differences from year to year or among countries would be shown in items like gross or net national product as differences existed or shifts occurred, e. g., in the proportion of owner-occupied and rental housing, or farmers' use of home grown and purchased food.

The committee, therefore, accepts the use of imputations in the national income and product accounts but feels that all imputations should be clearly identified in the accounts so that users can eliminate them if they wish. The committee does not think that the number of imputations should be expanded at this time in view of the very serious problems of measurement that would be raised, though as indicated below eventually it might be desirable to incorporate imputations for the use value of Government structures and consumer durables. The imputation for services of financial intermediaries also requires reexamination (ch. VII, secs. 1, 2, 3).

(c) The national total: Net or gross

At present the aggregate which receives most prominence in public discussion is gross national product, and in fact the set of accounts presented below is built around this aggregate. In view of the unsatisfactory conceptual nature of the present estimates of capital consumption, there seems little reason for recommending a shift to the net-product concept at the present time. However, the committee recommends below the development of replacement cost estimates of capital consumption, and when this is accomplished, the figures will more adequately reflect the net output of the economy after allowance for maintaining the capital stock intact.[16]

4. THE PROBLEM OF INTEGRATION OF NATIONAL ECONOMIC ACCOUNTS

The various forms of national economic accounts, such as national income and product accounts, input-output tables, flow-of-funds statements, balance of payments, and national balance sheets, do not

[16] A small minority of the committee feels that even replacement cost depreciation should not be used in calculating the net output of an economy. Both original cost and replacement cost depreciation as conceived of here take obsolescence into account, and it can be argued that although new inventions, etc., may result in a loss in capital values through obsolescence to individual producers, these factors should not be treated as losses, i. e., deductions from output, for the economy as a whole. Although they may cause losses to specific producers, they are gains for the economy as a whole.

at the present time form a single integrated system of accounts. The flow-of-funds statements provide a partial reconciliation with the data contained in the national income and product accounts, and the balance-of-payments data provide the basic information contained in the rest of the world sector of the national income and product accounts, but in neither case is movement between the various forms of accounts easy. The committee, in considering this problem of integration, has felt it necessary to inquire (a) whether integration is desirable per se, and (b) what difficulties stand in the way of accomplishing it. Finally, the committee has also felt it incumbent upon it to spell out in concrete terms exactly what it does recommend in the way of integration.

(a) The need for integration of the national economic accounts

Integration of the national economic accounts is desirable from three points of view. First, many economic problems require the use of several different kinds of information, and it is often necessary to move from the information provided by one kind of economic accounts to that provided by another. Second, from a statistical point of view, integrating the various kinds of economic accounts makes best use of the available data, with less duplication and with improvement in statistical accuracy. Finally, for the user of the national economic accounts, a single integrated system is easier to understand and use correctly than a number of different apparently unrelated or overlapping systems.

In analyzing many kinds of economic problems it is necessary to compare information contained in one form of accounts with that in another form. For example, for balance-of-trade problems it is sometimes important to consider exports and/or imports of a product from a given country in relation to the total domestic output of that product. This may require that the information in balance-of-trade statistics be reconciled with either national income and product data or input-output data. Similarly, there are many occasions when the flow-of-funds data must be analyzed in conjunction with the different national income and product aggregates such as the gross national product or personal income. Unless integration among the various forms of national economic accounts is achieved, different definitions are apt to be used for comparable categories of data, thus preventing movements or comparisons between the various forms of economic accounting. It would be very useful if identical classifications could be decided upon where appropriate. Only fairly systematic integration can achieve this objective.

From a statistical point of view, it is obvious that if two accounting systems have different definitions for what is essentially the same category of information, different tabulations will have to be made, and the same basic material will have to be gone over twice, when a single tabulation might in many instances have provided the information for both systems. In other instances, where categories of information, although not identical, are directly related, new tests of consistency will develop when the statistics are put into a single framework. Thus, for example, input-output tables and national income and product accounts have in the past been derived in part from different processing of the same data, and much might be gained in the accuracy of both systems by a conceptual integration. In some instances this

might result in the use of superior sources and the prevention of undesirable duplication.

Finally, from the point of view of the individual faced with the problem of using the information provided by the various forms of economic accounts, an integrated system would fit all of the pieces together into a relatively simple pattern. From a pedagogical point of view, this need has long been felt. All too often, each system is explained separately, with the observation added at the end that of course all these things are highly interrelated. A simple integrated system would provide the user with a guide to the national accounts, and at the same time demonstrate in a systematic manner the exact differences among the kinds of information provided.

(b) The difficulties of integration

There are very good reasons why in the United States a simple integration of the various forms of national economic accounts has not occurred to date. As already mentioned, the different accounting systems have different purposes and look at the economy from different points of view. The national income and product accounts, in contrast with other forms of national accounts, are designed to produce meaningful aggregations and consolidations of the economic activity that takes place within the Nation, subordinating the masses of detail. The input-output tables concentrate on the interindustry relationships, usually showing them in considerable detail. The flow-of-funds statements put their main emphasis on the sources and uses of funds by institutional sectors of the economy. Balance of payments statistics are limited to the transactions between the national economy and the rest of the world. National balance sheets deal with the asset, liability, and equity positions of the various groups and are used primarily for the analysis of financial interrelationships.

In organizing the basic data, input-output tables and flow-of-funds statements take very different approaches. In input-output tables, economic units are classified according to the nature of their productive activity, rather than by the characteristics of the firm or legal entity involved. Thus for input-output purposes, the automobile industry would include only those plants specifically engaged in the production of automobiles; General Motors Corp. would never appear as an entity, but rather the activities of its plants, or even shops within plants, producing automobiles would be separated as far as feasible from the activities of the company's other plants or shops. Such an approach is necessary in studying the processing activities of industries from a predominantly technological angle. The flow-of-funds statements, in contrast show the sources and uses of funds by institutional sectors, and for this purpose it is appropriate to focus on the firm as the decisionmaking and financial unit. In the flow-of-funds statements all transactions of General Motors Corp. would be considered in the same sector. The economy is classified according to legal form of organization within fairly broad producing groups, rather than on the basis of processing activity alone. The dilemma that may arise in the national balance sheets has already been noted; on the one hand, it is sometimes useful to classify tangible assets by processing industry, but on the other hand it is as a rule necessary to classify financial assets and liabilities and equities according to the same system as is employed in the flow-of-funds statements.

If the national accounts information is to be made available in published form, it would not be practical to achieve integration of these different systems of sectoring by full cross classification. Such a procedure would result in large masses of unwieldy information that would be more likely to hamper than to aid analysis. If, for example, an input-output table which specified several hundred industries had to show within each industry all the forms of institutional and legal organization, the matrix would become so large that publication in comprehensible form would be virtually impossible.

(*c*) *Basic requirements for a system of integrated national economic accounts*

The requirements that will be set forth here are only those that bear directly on the nature of the integrated national economic accounting system which is proposed. In these terms there are five major requirements, which become the basic principles on which the integration is based. These are (1) that the national income and product accounts provide the general framework for the integrated system of economic accounts; (2) that a national income accounting system so specified be simple, articulated, and framed in terms of economic activities rather than legal forms of organization; (3) that the sectoring of activities in the economy be carried out both for industries in terms of establishments and for legal forms of organizations; (4) that all sectors have full sets of current and capital accounts;[19] and (5) that the integrated system be such that the various forms of national economic flow accounts other than the national income and product accounts can be consolidated into the summary national income and product accounts, and that the accounts representing stocks result from cumulating flow accounts.

The suggestion that the national income and product accounts provide the general framework for integrating the various forms of economic accounts was originally made by Morris Copeland.[20] Because the national income and product accounts are essentially summary statements of the activity of the economy as a whole, they are ideally suited for such a role. In contrast with the other systems, national income and product accounts are the only system which is built around specific aggregates. The various other forms of economic accounting could be made to tie in with the income and product accounts at a fairly aggregated level, and consequently there would be much more freedom possible at the more detailed levels than if a more detailed integration were attempted.

The idea of setting up the national income and product accounts in a simple articulated system in terms of economic activities was presented by George Jaszi.[21] Such a system would consolidate all productive activity in the economy into a single gross national income and product account. Other simple accounts would be shown for the activities of consumers, Government, foreign trade, and saving and investment. It is such a system of national income accounts that will be presented below.

[19] For discussion of the capital accounts for Government and consumers, see [illegible]

[20] "The Feasibility of a Standard Comprehensive System of Social Accounts," in Problems in the International Comparison of Economic Accounts, Studies in Income and Wealth, vol. 20 (Princeton, 1957).

[21] In A Critique of the United States Income and Product Accounts, Studies in Income and Wealth, vol. 22 (in press).

The sectoring of the accounts into industries and by legal form of organization in the system proposed below follows the lines recommended by Stanley Sigal.[22] Sigel recognized that two basic kinds of sectoring would be required if the input-output table and the flow-of-funds statements were both to be consistent with their basic objectives. A single form of sectoring of a compromise nature would mean that the statistics would not be useful for either purpose.

The provision of both current and capital accounts for all sectors follows the line of reasoning developed by Richard Stone,[23] and more recently in the United Nations system of national income and product accounts.[24] This means that for any particular sector, it will be possible to select out of the various parts of the integrated accounting system a set of accounts which will show all the transactions of that sector, as illustrated in tables C and D, pages 37 and 38, below.[25]

Finally, the procedure whereby certain forms of economic accounts could be obtained by deconsolidating one of the summary national income and product accounts was suggested by the National Income Division of the Department of Commerce. Specifically, it was shown that the consolidated saving and investment account could be broken down into accounts showing the changes in assets and liabilities for each of the sectors. Following this suggestion through for the other accounts, it becomes possible to erect a system of supplementary deconsolidated tables that cover all the forms of national economic accounts.

5. IMPLEMENTATION OF AN INTEGRATED SYSTEM OF NATIONAL ECONOMIC ACCOUNTS

The implementation of the integrated national economic accounting system follows quite closely the requirements listed in the preceding paragraphs. The system presented here has been strongly influenced by that set forth in National Income Accounts and Income Analysis[26] by Richard and Nancy D. Ruggles. The suggestions made by the committee, of course, are limited to the general form of the national economic accounting system. The details, such as the exact number, coverage, and titles of the individual lines in the various accounts and tables are primarily illustrative, and should not be regarded as specific and definite recommendations by the committee. The present purpose is simply to establish the form of the accounts toward which the various components of the national economic accounts now existing should converge. It will obviously be necessary to work out the details of the system within the Federal Government and it will then be essential to have the proposed new tables systematically examined by the various user groups.

In discussing the implementation three things will be considered First, the general form of the national income and product accounts which are to serve as the framework of the integrated system will be presented. Second, the way in which the other forms of economic accounting can be related to the national income and product account framework will be shown. Finally, the derivation of current and

[22] A Comparison of the Structures of Three Social Accounting Systems, in Input-Output Analysis: An Appraisal, Studies in Income and Wealth, vol. 18 (Princeton, 1955).

[23] Measurement of National Income and the Construction of Social Accounts, United Nations, Studies and Reports on Statistical Methods, No. 7, Geneva, 1947 (sales No.: 1947.II.6).

[24] A System of National Accounts and Supporting Tables, United Nations, 1953.

[25] For discussion of the capital accounts for Government and consumers, see ~~[illegible]~~ pp. 72ff and 80ff.

[26] McGraw-Hill, 1956.

capital accounts for the different sectors of the economy from the integrated system will be demonstrated.

(*a*) *The national income and product accounts*

An example of the kind of national income system recommended by the committee is given in appendix A, tables 1–6. The system is summarized in tables A and B below.

This summary system of national income and product accounts distinguishes the economic activities of production, consumption, and investment. The various accounts can be deconsolidated into sectors either by processing industries (for input-output purposes), or by form of organization (for flow-of-funds and balance-sheet purposes). The succeeding paragraphs describe the specific deconsolidated tables and accounts which will achieve the integration of all the different bodies of data.

The consolidated production account (table A–1 in appendix A) embraces the production activities of the economy as a whole, and is identical in scope with that of the national income and product account (table 1) in the current United States national accounts system. Two accounts were used to show expenditure on goods and services, because it was felt that even at the most summary level it would be useful to distinguish private consumption from public services. The private consumption account shows the income, consumption, transfers, and saving of all household and nonprofit institutions on a consolidated basis. Investment for the economy is shown in a consolidated saving and investment account, bringing together the saving and investment items in the other accounts. To show production, consumption, and investment, these four accounts would be sufficient. The rest of the world could be treated as an industry; the item "net exports" would appear as an end use of product on the product side of the consolidated production account and as an investment item in the saving and investment account. There is, however, sufficient interest in foreign trade as a separate activity that it seems fitting to introduce a separate gross account for it.

TABLE A.—*Summary of a system of national income and product accounts for the United States for 1953*

[In billions]

I. GROSS NATIONAL INCOME AND PRODUCT ACCOUNT

1.1	Payments by producing units to individuals (2.5)	$277.5
1.2	Income retained by producing units (5.4)	39.5
1.3	Tax and income payments by producing units to Government (3.6)	54.4
1.4	Minus: Subsidies and Government interest (3.2)	7.6
1.5	Statistical discrepancy (5.7)	1.0
	Gross national income	364.8
1.6	Consumers' expenditures on goods and services (2.1)	229.6
1.7	Government expenditures on goods and services (3.1)	77.2
1.8	Gross expenditures on producers' durable goods (5.1)	51.6
1.9	Net change in producing units inventories (5.2)	1.5
1.10	Exports (4.1)	21.3
	Total availabilities	381.2
1.11	Minus imports (4.5)	16.4
	Gross national product	364.8

II. PERSONAL INCOME AND OUTLAY ACCOUNT

2.1	Consumers' expenditures on goods and services (1.6)	$229.6
2.2	Tax payments by individuals (3.7)	44.6
2.3	Transfer payments to abroad (4.6)	.5
2.4	Personal saving (5.3)	15.6
	Personal outlay and saving	290.3
2.5	Payments by producing units to individuals (1.1)	277.5
2.6	Transfer payments by Government to individuals (3.3)	12.8
2.7	Transfer payments from abroad (4.3)	.0
	Personal income	290.3

III. GOVERNMENT RECEIPTS AND OUTLAY ACCOUNT

3.1	Government expenditures on goods and services (1.7)	77.2
3.2	Subsidies and Government interest (1.4)	7.6
3.3	Transfer payments to individuals (2.6)	12.8
3.4	Transfer payments to abroad (4.7)	6.3
3.5	Government surplus (5.5)	−4.8
	Government outlay and surplus	99.1
3.6	Tax and income payments by producing units (1.3)	54.4
3.7	Tax payments by individuals (2.2)	44.6
3.8	Transfer payments from abroad (4.3)	.1
	Government receipts	99.1

IV. FOREIGN TRADE AND PAYMENTS ACCOUNT

4.1	Exports (1.10)	21.3
4.2	Transfer payments to individuals (2.7)	.0
4.3	Transfer payments to Government (3.8)	.1
4.4	Net borrowing from abroad (5.6)	1.9
	Receipts from abroad	23.2
4.5	Imports (1.11)	16.4
4.6	Transfer payments from individuals (2.3)	.5
4.7	Transfer payments from Government (3.4)	6.3
	Payments to abroad	23.2

V. GROSS SAVING AND INVESTMENT ACCOUNT

5.1	Gross expenditures on producers' durable goods (1.8)	51.6
5.2	Net change in producing units inventories	1.6
	Gross domestic investment	53.1
5.3	Personal saving (2.4)	15.6
5.4	Income retained by producing units (1.2)	39.5
5.5	Government surplus (3.5)	−4.8
5.6	Net borrowing from abroad (4.4)	1.9
5.7	Statistical discrepancy (1.5)	1.0
	Gross saving	53.1

TABLE B.—*Summary of national income and product accounts for the United States, 1958*

[In billions]

Flow	Production account		Consumption account		Government account		Foreign account		Capital account	
	Allocation	Source	Allocation	Source	Allocation	Source	Allocation	Source	Allocation	Source
1. Payments by producing units to individuals	$277.6			$277.6						
2. Income retained by producing units	30.6									$30.6
3. Tax and income payments by producers to Government	54.4					$54.4				
4. Subsidies and Government interest	−7.6				37.6					
5. Statistical discrepancy	1.6									1.6
6. Consumers' expenditures on goods and services		$220.6	$220.6							
7. Government expenditures on goods and services		77.2								
8. Gross expenditures on producers' durable goods		41.6			77.2				$51.6	
9. Net change in enterprise inventories		1.6							1.6	
10. Exports		23.3					$23.3			
11. Imports		−16.4						$16.4		
12. Tax payments by individuals to Government			$44.6			44.6				
13. Transfer payments by individuals to abroad			.5					.5		
14. Personal saving			14.6							14.6
15. Transfer payments by Government to individuals				12.8	12.8					
16. Transfer payments from abroad to individuals				0			0			
17. Transfer payments to abroad by Government					6.3			6.3		
18. Government surplus					−4.8					−4.8
19. Transfer payments from abroad to Government						.1	.1			
20. Net borrowing from abroad							1.9			1.9
Total	354.8	354.8	280.3	280.3	99.1	99.1	23.2	23.2	53.1	53.1

In this system of accounts the flows are expressed in relatively gross terms. The flows are grouped according to the other accounts in the system from which they flow and to which they are paid, and this network of grouped flows forms a simple articulated system. The simplicity of the system can be seen in table A; in this table the detail has been omitted, leaving only the major flows.

A presentation of this sort also has the advantage that it tends to increase international comparability at least at the aggregate level. Lack of international comparability often occurs because different systems of sectoring or breakdowns are available for different countries, and adjustment is difficult. The system suggested above requires relatively few individual flows, and alternative breakdowns within the flows do not affect the comparability of the accounts themselves. Thus the lack of data for some small and intrinsically unimportant flows will not impede overall comparability. Table B shows the 20 flows that are required for implementation of the system arranged into a single table.

Much of the simplicity of this system has been obtained by omitting some of the national income aggregates from the system of national income accounts. Thus neither net national nor national income is shown. This does not mean that these aggregates should be neglected. Rather, they could be treated as is now done in table 4 of the

United States system, in a separate table showing the relationships among the aggregates.

(*b*) *The relation of the other forms of national economic accounting to the national income and product accounts*

With the national income and product accounts providing framework for the national economic accounting system, it is now possible to describe more precisely how the other forms of accounts can be related to them. The interrelation can be achieved by considering the other forms of economic accounting as deconsolidations of specific accounts within the national income and product accounts. For example, the gross national income and product account covers all the productive activity taking place in the economy. The input-output table also covers this same general area of activity, but it shows in addition the interindustry relationships—transactions that have been consolidated out in the gross national income and product account. Similarly it will be found that the introduction of specific subclassification in terms of sectors and the inclusion of transactions which have been consolidated out in the national income and product accounts can provide the necessary data for the other forms of national economic accounting, such as flow-of-funds statements, etc. Below is a list of the tables that are envisaged, together with references to the tables in the appendix which have been drawn up as examples.

(1) National income and product account (consolidated production account)—table A–1.

(*a*) Value of product by industrial sector (input-output table, current)—table A–6.

(*b*) Value of product by institutional sector (producing sectors' current account of the flow-of-funds statement)—table A–7.

(2) Personal income and outlay account (private consumption account)—table A–2.

(*a*) Income and outlay by institutional sector (private consuming sectors' current account of the flow-of-funds statement)—table A–8.

(3) Government receipts and outlay account (public services account)—table A–3.

(*a*) Receipts and outlay by kind of government (public services sector current account of the flow-of-funds statement)—table A–9.

(4) Foreign trade and payments account (external account)—table A–4.

(*a*) International current payments by country and commodity (trade matrix of the balance-of-payments account)—table A–10.

(5) Saving and investment account—table A–5.

(*a*) Savings and investment by industry (input-output, investment)—table A–11.

(*b*) Stock of reproducible goods by industry (input-output, capital stocks)—table A–12.

(*c*) Changes in assets and liabilities by institutional sector (saving and investment account of the flow-of-funds statement and balance of payments account)—table A–13.

(*d*) Stock of assets and liabilities by institutional sector (national balance sheet)—table A–14.

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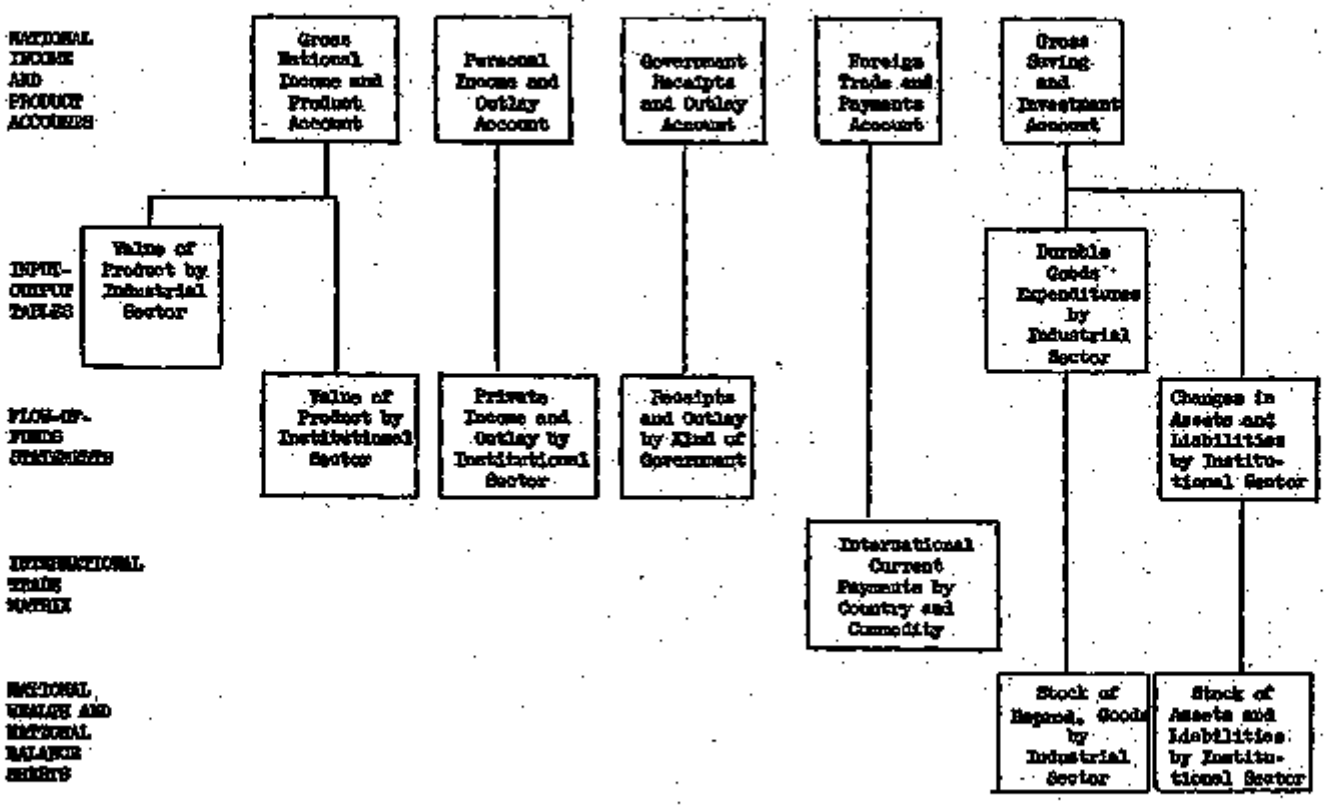
From a schematic point of view, it is possible to show how the various tables are interrelated and how they relate to the various kinds of national economic accounting systems. In chart 1 the five national income and product accounts are shown in the top row. The next row shows the derivation of the input-output table from the gross national income and product account. As a part of the input-output system, also, a table is derived from the gross saving and investment account, showing saving and investment by industry. The flow-of-funds statements are represented by the third row. It includes four separate tables. Three of these, derived from the first three of the national income and product accounts, show the nonfinancial receipts and outlays for institutional sectors. The fourth, derived from the saving and investment account, shows changes in assets and liabilities for these sectors. The international trade matrix is shown in the fourth row, as a breakdown of the foreign trade and payments account. Balance of payments information, however, will also be covered in the input-output tables and the flow-of-funds statements, where the foreign sector is shown both as an industrial classification and an institutional classification, and imports and exports by industry are also given explicitly in the input-output table. The bottom row shows the national wealth table and the national balance sheet as derived from the expenditures on reproducible assets on the one hand, and the changes in assets and liabilities on the other. This in broad terms is the general nature of the system, but for further clarification it will be useful to examine the specific supplementary tables in somewhat more detail.

Chart 1. The Interrelation of the National Economic Accounts



(1) *Value of product table classified by industrial sector.*—It is recommended that a table supplementary to the consolidated production account be drawn up to show the gross value-of-products flows and the sales and purchases of industries to and from each other. The classification should be on an establishment basis, tying in with the system used by the input-output table. An example of the stubs and column headings for a table which deconsolidates the production account according to industrial sectors is shown in table A–6 of appendix A. This table gives income and expenditures information for the various industries in the economy. The value of product is shown both in terms of the sales which are made by each industry to other industries or groups in the economy, and in terms of the manner in which each industry allocates its receipts from sales to other industries or groups. The allocations of receipts by a particular industry excluding interindustry current account purchases are equal to gross product originating in that industry plus imports. The sales of products by a particular industry excluding sales to other industries on current account measures the final product originating in that industry, and the total for all industries yields gross national product plus imports. The value of product accounts are combined rather than consolidated accounts. They show not only the breakdown by industrial sector of the information contained in the usual gross national income and product account, but in addition the interindustry sales and purchases on current account that are consolidated out of the gross national income and product account. For maximum usefulness the key manufacturing groups should also be shown separately.

The extension of the consolidated production account illustrated in table A–6 has the following functions. (1) It ties the current transactions of the national income accounts to input-output tables at a fairly aggregative level. (2) The value of product flows themselves are useful for aggregative economic analysis. For example, with present statistical information it is not possible to ell how much of the output of an industry was exported to other countries, or how much of the input of a particular industry comes from imports. (3) The data help to improve the quality of the national income statistics. Value of product data for particular industries are often available, and if they are introduced explicitly into the system they can be used as a test of consistency. (4) The value of product data are required for the development of constant price data for industries. To obtain real output figures for individual industries, it is necessary to deflate the input of materials to the industry and the output of the industry separately to obtain a deflated value added (cf. ch. VI).

(2) *Value of product table classified by institutional sector.*—Just as it is useful to show a supplementary deconsolidation of the gross national income and product account by industrial sectors, it is also useful to show a supplementary deconsolidation of it by institutional sectors. Such a procedure yields the equivalent of profit and loss statements for all the producing units in the economy grouped according to form of organization. From a practical standpoint the deconsolidation of production by institutional sectors can and need be carried out in considerably less detail than is recommended for the industrial classification. It is not necessary, in the institutional sectoring, to spell out the to-whom from-whom relationships in each sec-

tor's sales and purchases on current account. Unlike the inter-industry relationships, there has been little analytic interest in the interrelation of purchases and sales on an institutional sector basis. In the value of product table by institutional sectors, therefore, the sectoral classifications need not appear as rows in the table. A single item, "Purchases from producing units on current account," will be sufficient, as shown in table A–7.

In basic concept the value of product table by institutional sector is the same as the value of product table by industrial sector; the only differences lie in the kind of sectoring employed and in the omission of detail in the purchases from producing units on current account. The institutional sector table provides the equivalent of profit and loss statements for producing units classified by form of organization, and so yields the current account portion of the information contained in flow-of-funds statements for producing units. The importance of such information for many forms of monetary and fiscal analysis has already been discussed, and it is sufficient to point out here the usefulness of providing this information in a form that ties in directly with national income and product accounts, on the one hand, and with input-output tables, on the other hand.

(3) *Personal income and outlay table by institutional sector.*—The coverage of the personal income and outlay account is quite broad, embracing all forms of private consumption in the economy. For example, the income, outlays, and saving of farmers and other unincorporated businesses appear in the account as well as the income, outlays, and saving of families receiving wages, salaries, and property income. The problems involved are discussed in greater detail in chapter VII, section 1, of this report. It is recommended there that within that account separate sectors be set up for farmers, nonfarm entrepreneurs, other households and nonprofit institutions. In carrying out this breakdown it is not necessary to show the articulation among the personal sectors and between each of the personal sectors and each of the other (nonpersonal) accounts, so that the deconsolidation could be similar in nature to that shown in table A–7 for producing units by institutional sector.[24] The sectors would appear as column headings in the table, and the kinds of income, together with the kinds of outlays, taxes, and saving, would be shown as rows. The form is shown in table A–8. This table gives the current accounts for the private consumption sectors and so represents the current account portion of the flow-of-funds statements for these groups.

(4) *Government receipts and outlay table by governmental unit.*—The Government receipts and outlay account presents public transactions in the form of a consolidated statement of receipts, outlays,

[24] The basic difference between consolidated accounts and sectors in the system of national accounts as the terms are used here is that consolidated accounts are articulated, while sectors are not. This means that every flow between any two consolidated accounts is shown explicitly in the system. Thus in a 5-account system a minimum of 20 flows would be shown where only 1 kind of transaction occurs [$n(n-1)$ where n equals the number of accounts]. If the number of transactions identified, i. e., transfers versus purchases of goods and services, is increased, this will lead to a direct multiplication in the number of flows in the system: $mn(n-1)$ where m equals the number of kinds of transactions. Thus if 2 kinds of transactions were systematically distinguished, 40 flows would result. Introducing sectors on an unarticulated basis increases the number of flows in proportion to the number of sectors introduced: $mnn'(n-1)$, where n' equals the number of sectors. This would mean, if 10 sectors were introduced on an unarticulated basis into a system of 2 transaction types in 5 accounts, 400 flows. If the sectors are articulated, however, the formula would be $mn\ (n')^2(n-1)$, or 4,000 flows in the above example. Thus introducing sectors on an unarticulated basis reduces the number of flows required by a factor equivalent to the number of sectors from what it would be with articulation.

and saving. For a great many problems it is important to obtain a deconsolidated view of Government operations. A sectoring into Federal, State, and local government is shown in table A–9, which provides the current account portion of the flow-of-funds statement for the government sectors. A further subdivision in each case into (*a*) General Government, and (*b*) Government funds such as the old-age and survivors trust fund, would be very desirable.

(5) *International trade matrix.*—In the presentation of balance of payments data, it has become customary in recent years to show the international trade of a country in terms of both the geographic distribution and the commodity breakdown of imports and exports. Such tables are essentially detailed breakdowns of the foreign trade and payments account in the national income and product accounts. It is therefore recommended that the international trade tables and the foreign trade and payments account be so designed that they fit together. An example is shown in table A–10.

(6) *Saving and investment table by industrial sector.*[28]—For many purposes it is important to know what industries are adding to their plant and equipment, and to what extent it can be financed by the saving going on in the industry. Such information is the capital account counterpart of the value-of-product table by industrial sectors discussed under (2). The columns of such a table would be the same as those shown for the value-of-product table by industrial sector, while the rows would classify investment by type of product, as shown in table A–11. In deconsolidating the gross saving and investment account by industry, it will be necessary to include purchases of existing assets (e. g. used plant and equipment, land, etc.). Such items represent disinvestment by industries selling them and thus like transfers consolidate out in the gross saving and investment account for the economy. A saving and investment table by industry providing this kind of information would be very useful for the analysis of such problems as capital requirements, productivity, and economic growth in terms of specific industries. In many industries it may not be meaningful to compute undistributed profits by industry, since such a concept has meaning only on a firm basis.

(7) *Stock of reproducible goods table by industrial sector.*[28]—The table showing investment expenditures by industrial sector has a counterpart showing the existing stock of reproducible durable goods by industrial sector. This table would have the same rows and columns as table A–11. This new table could be obtained from the information contained in the yearly savings and investment by industry table, if available for a sufficiently long period, plus information regarding depreciation or retirement of durable goods. A problem of valuation would arise, in that expenditures on durables would have to be revalued in constant (or current) prices in order to be comparable over time. On the other hand, valuation at market prices at any given point in time probably would be most useful for comparisons among industries. For some purposes, furthermore, it might be that some measure of productive capacity of the durable goods should be used as the basis of valuation rather than replacement cost; but such problems, some of which are discussed in chapter XIV, would not affect the form of the table.

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[28] For discussion of the capital accounts for government and consumers, see [illegible]

pp. 725 and 801

(8) *Changes in assets and liabilities table by institutional sector.*[28]—The saving side of the saving and investment account shows the surplus arising in the current accounts of producers, private consumers, Government, and foreign trade. Such surplus results in changes in assets and liabilities reflecting the increase in the equity of the groups involved. The saving side of the saving and investment account can be deconsolidated to show all the changes in assets, liabilities, and equity that have taken place for each sector. The net change in the asset and liability position of a sector, if expressed as the difference between current (market) values at the beginning and end of the period, will not equal the saving for that sector as recorded in the national income and product accounts; capital gains or losses, which do not flow through the income and product accounts, must be added as a part of the deconsolidation process if this equality is to be restored.

The deconsolidation of the saving side of the saving and investment account should follow the institutional sectoring discussed under (2), (3), and (4). Together with tables A–7, A–8, and A–9 in appendix A, this deconsolidation provides a complete flow-of-funds system for the economy, thus integrating the flow-of-funds statement with the national income and product accounts.[29] Each institutional sector is supplied with the equivalent of a profit and loss or income and outlay account plus a saving and investment account. The saving and investment account for the foreign sector, furthermore, becomes a balance of payments account, wherein the changes in gold stock and in holdings of other assets and liabilities in the foreign sector are shown.

A deconsolidation of the gross saving and investment account along these lines is shown in table A–13.

(9) *Assets and liabilities table by institutional sector.*[30]—A table showing the level of assets and liabilities by institutional sector can be drawn up in much the same general form as the table showing changes in assets and liabilities. This table would in effect be a national balance sheet. The problem of valuation mentioned in connection with the table showing changes in assets and liabilities would also extend to this table. Here at least two different valuations may be used. For many purposes (including, for example, the study of taxable capital gains), it is important to show remaining original cost valuation of assets. For other purposes, the current market value or replacement cost valuation may be needed. Table A–14 shows the form of this table, using market valuations for the assets and liabilities, but also showing original cost depreciation and the valuation adjustment.

TABLE C.—*Accounts for the manufacturing sector*

1. MANUFACTURING PRODUCTION ACCOUNT

1. Purchases from producing units on current account	____
2. Payments by manufacturing to individuals	____
3. Income retained by manufacturing	____
4. Payments by manufacturing to Government	____
5. Imports by manufacturing	____
6. Minus: Adjustments	
a. Subsidies	____
b. Government interest received	____

[28] See footnote 38 on p. 152.
[29] Cf. discussion of flow-of-funds statement in ch. XIII.
[30] For discussion of the capital accounts for Government and consumers, see Chs. VII, 2, and XIV.

TABLE C.—*Accounts for the Manufacturing Sector—Continued*

I. Manufacturing Production Account—continued

7. Statistical discrepancy	
Total value of product	
8. Sales to producing units on current account	
9. Sales to consumers	
10. Sales to Government	
11. Sales to producers on capital account	
12. Net change in inventories	
13. Exports by manufacturing	
Total value of product	

II. MANUFACTURING GROSS SAVINGS AND INVESTMENT ACCOUNT

1. Purchase of durable goods by manufacturing	
2. Net change in manufacturing inventories	
3. Net purchases of existing assets by manufacturing [1]	
Total gross investment	
4. Realized capital gains	
5. Income retained by manufacturing	
6. Net borrowing by manufacturing	
Total surplus and net borrowing	

III. TANGIBLE ASSETS OF MANUFACTURING

1. Durable goods	
2. Inventories	
3. Nonreproducible assets	
Total tangible assets	
4. Realized capital gains	
5. Income retained by manufacturing	
6. Net borrowing	
7. Revaluation of assets	
Total surplus, borrowing, and revaluation	

TABLE D.—*Accounts for the nonprofit institutions sector*

I. PRODUCTION ACCOUNT FOR NONPROFIT INSTITUTIONS

1. Purchases from producing units on current account	
2. Payments to individuals for services	
3. Tax payments	
Total value of product	
4. Sales	
5. Imputed value added by nonprofit institutions (net purchases of goods and services)	
Total value of product	

II. RECEIPTS AND OUTLAY ACCOUNT FOR NONPROFIT INSTITUTIONS

1. Net purchases of goods and services	
2. Transfer payments to abroad	
3. Transfer payments to individuals	
4. Surplus	
Total outlays and surplus	
5. Transfer payments from business	
6. Transfer payments from Government	

[1] Purchases and sales to be shown separately.

TABLE C.—*Accounts for the Manufacturing Sector—Continued*

II. Receipts and Outlay Account for Nonprofit Institutions—continued

7. Transfer payments from abroad	
8. Transfer payments from individuals	
Total receipts	

III. CHANGES IN ASSETS AND LIABILITIES ACCOUNT FOR NONPROFIT INSTITUTIONS

1. Gold	
2. Currency and deposits	
3. Loans	
4. Securities	
5. New equipment	
6. New construction	
7. Net purchases of existing assets	
8. Other assets	
Total changes in assets	
9. Notes and accounts payable	
10. Mortgages	
11. Bonds	
12. Other liabilities	
13. Income retained:	
(a) Depreciation	
(b) Inventory and depreciation valuation adjustment	
(c) Surplus or deficit	
14. Realized capital gains	
Total changes in liabilities and surplus	

IV. ASSETS AND LIABILITIES ACCOUNT FOR NONPROFIT INSTITUTIONS

1. Gold	
2. Currency and deposits	
3. Loans	
4. Securities	
5. Equipment	
6. Structures	
7. Land	
8. Other assets	
Total assets	
9. Notes and accounts payable	
10. Mortgages	
11. Bonds	
12. Other liabilities	
13. Current income retained	
14. Realized capital gains	
15. Unrealized capital gains	
Total liabilities and surplus	

(c) *Sector accounts in the integrated national economic accounting system*

In addition to providing an integration of the existing national economic accounts, the integrated system which is proposed here also provides a complete set of transaction accounts for each of the industrial and institutional sectors in the economy. Thus for manufacturing, set forth in table C as an example of industrial sectoring it is possible to derive a current production account showing sales and the allocation of receipts from sales, a saving and investment account showing saving and investment carried out by manufacturing, and a tangible asset account showing the total tangible assets of manufacturing. Obviously if finer industrial sectors are chosen, e. g., for the textile industry, similar information would be available in the integrated system of accounts for such sectors. It will be noted that government and foreign countries are shown as industrial sectors.

As producing industries the accounts of these two sectors would have the same form as that shown for manufacturing. They would contain only those transactions of the government and foreign sectors that relate to production. In the case of government there might be some sales of products on current account, but the major item in the account would be purchases of goods and services by government and the compensation of government employees. According to national income accounting practice the net purchases of goods and services by government are imputed as government product, and in the accounting structure this is handled by recording imputed government sales on the right hand side of the production account equivalent to the difference between sales and costs. The account would thus balance.

For the institutional sectors an additional account sometimes appears. For example in the case of nonprofit institutions, shown in table D, the production account would be similar in nature to that discussed above for government. In addition, however, a receipts and outlay account would be needed that would show the receipts and disposition of all funds of nonprofit institutions, not merely those relating to production. Finally, two more accounts, changes in assets and liabilities, and total assets and liabilities, would also be provided for the nonprofit institution sector.

For some of the other institutional sectors, such as corporations, only three accounts would be needed: the production account, the changes in assets and liabilities account, and the assets and liabilities account. Corporations, unlike nonprofit institutions, do not require a separate receipts and outlay account, since all of their receipts and outlays are covered in the production account. Finally, individuals (other than farm, entrepreneurs, nonprofit institutions, and nonfarm entrepreneurs) do not require a production account, so in this case again only three accounts will appear: The receipts and outlay account, the changes in assets and liabilities account, and the assets and liabilities account.

With respect to the consuming and Government sectors, the committee has considerable reservations as to the content, and even the meaning, of capital accounts. The issues involved are discussed in greater detail in sections VII.1 and VII.3. The committee is reluctant to classify all expenditures on intangibles as current expenditures and all outlays on tangible assets as capital expenditures. All too often, the rate of outlays for producers' goods or durable goods is regarded as a measure of the contribution that is being made to economic growth. This conclusion neglects the fact that, for example, our $8 billion annual outlay for research and development (about half private and half public) is probably a more important contribution to economic growth than an equal amount of outlays for producers' goods, although most of such expenditures would be recorded in the current accounts.

Particularly in the case of Government, investment in human capital, including health and education, are so important than the conventional classification into current and capital accounts is not very meaningful and may even be misleading. For these reasons, the committee prefers to regard the capital accounts as durable goods accounts, rather than accounts which record capital in any economic sense. For consumers and Government, furthermore, the committee feels that the problem can best be handled by including all expenditures on goods and services, whether durable or nondurable, as expenditures on current account. This treatment avoids the necessity of drawing a line of demarcation between current and capital expenditures. Saving, in this treatment, becomes the difference between total receipts and total outlays on goods and services (except residential housing).

As a consequence of this treatment of expenditures on consumer and Government durables, it would logically follow that these durable goods should not appear either as capital expenditures or as assets in the capital accounts. Nevertheless, the committee does feel that it would be useful to have an inventory of these consumer and Government durable goods, and recommends that such supplementary information be provided. These accounts for consumers and Government are purely supplementary tables. They are of the same general form as the capital accounts for the other sectors, but unlike the usual capital accounts, the data on consumer and Government durables would not be tied in to the current accounts in the manner that the capital accounts for the other sectors are related to their current accounts. The saving and equity items in the capital accounts for consumers and Government will thus be unrelated to the saving and surplus items in the current accounts.

(*d*) *Summary flow tables for the economy*

For many purposes, it is useful to set forth the pattern of receipts and outlays of different parts of the economy, showing to what extent various sectors have an excess of outlays over receipts or vice versa. From the point of view of the economy as a whole, obviously, it will be found that the deficits will exactly balance the surpluses. The system of national economy accounts described here permits such a summary table to be constructed. Table E shows the kind of table that could be drawn up.

Besides showing current and capital accounts for specific sectors of the economy, it is also possible to abstract from the integrated set of national economic accounts a table showing receipts and outlays for all industrial or institutional sectors of the economy. Such a table is presented in table E below. This table is derived from tables A–7, A–8, and A–9 in the appendix. It shows the current account for all sectors of the economy.

TABLE E.—*Summary of receipts and outlays for the economy*

Sector	Receipts				Outlays					Excess of receipts (+) or outlays (−)
					Goods and services					
	Goods and services	Taxes	Transfers	Total	Current	Producers' durables	Taxes	Transfers	Total	
1. Consumer households										
2. Nonprofit institutions										
3. Enterprises										
(a) Nonfinancial private corporations										
(b) Financial private corporations										
(c) Nonfarm unincorporated enterprises										
(d) Farm enterprises										
(e) Government enterprises										
4. Government										
(a) Federal										
(b) State										
(c) Local										
5. Foreign countries										
6. Subtotal										
7. Adjustments for intermediate purchases, transfers and statistical discrepancy										
8. Gross national product										

6. SUMMARY OF RECOMMENDATIONS

Integration of the various forms of national accounts into a single system is feasible at an aggregative level. The national income and product accounts provide a framework that can be utilized for this purpose. In recommending that such integration should take place, however, the committee does not mean to suggest that it be carried out at any but a highly aggregative level. Different Government agencies interested in such fields of national economic accounting as input-output tables, flow-of-funds statements, and balance of payments will find it necessary to make considerably more detailed studies for their own special purposes. Nevertheless, the committee believes that there is considerable merit in using the data arising from these more detailed studies, supplemented in some cases by additional data, to produce ultimately a single integrated national economic accounting system of the type described in this chapter.

CHAPTER VI. CONSTANT DOLLAR ESTIMATES [23]

1. THE PROBLEM

In the committee's judgment, one of the areas of most needed development is the estimation of national product and its components in

[23] This chapter is virtually limited to a discussion of constant-dollar estimates of national product and income. This limitation was indicated by the predominant importance of the income and product account for the problems of deflation and the similarity, though not identity, of the deflation problems encountered in the other segments of the national accounts. It was, moreover, enforced by the limitation of time at the committee's disposal. Some remarks on the special problems of constant-dollar national balance sheets will, however, be found in chs. V and XIV.

terms of constant dollars, i. e., in terms free from the influence of year-to-year variations in prices. The potential uses of such constant-dollar estimates for the economic analyst are as great as those of the current-dollar estimates. Without such figures it is not possible to say whether an increase or a decline in the current-dollar estimate of gross national product from one year or one quarter to the next reflects a decrease in the physical volume of production, or is due primarily to a change in prices. The answer to this question, however, is clearly of critical importance to the Government in reaching a decision as to what policies to adopt, and will probably be of significance to business firms in formulating their sales and production programs.

Again, constant-dollar estimates of gross national product are necessary to assess changes in the Nation's level of living. We wish to know whether the average volume of commodities and services per member of the population is higher in 1957 than a year or a decade ago, and, if so, whether this higher level is due to a greater supply, say, of food and clothing, or automobiles, or defense goods. But for this type of comparison use of the current-dollar estimates of gross national expenditure is insufficient, since the more recent expenditures were made at a price level which averaged noticeably higher than that of a decade ago; hence, it is necessary to turn to a constant-dollar estimate.

We are interested also in tracing changes in the Nation's productivity, as reflected, for example, in the average output per man-hour of work. Has productivity increase in this country been greater in recent years than abroad? In what parts of the economy has it been most rapid—in agriculture, manufacturing, trade? Where has it lagged behind? Again, answers to these questions require estimation of national product and its components in terms free from the influence of price changes.

At the present time constant-dollar estimates are published by the National Income Division only for total gross national product and certain very broad expenditure components. Consumption expenditures, for example, are divided only into expenditures for durable goods, nondurable goods, and services, and Government purchases are split into Federal and State and local expenditures. What is equally serious, these estimates are available only for annual periods.[32] The overwhelming proportion of the National Income Division's resources is devoted to preparation of the current-dollar estimates. Indeed, prior to 1950 there were no constant-dollar estimates published at all. The lag in this area is no reflection on the National Income Division. First, by the nature of the estimating process, the current-dollar figures must precede the constant-dollar ones. Secondly, the National Income Division is critically dependent in this area on the close cooperation of other statistical units in the Government that are engaged in assembling and analyzing price data, particularly the Bureau of Labor Statistics and the Agricultural Marketing Service. While such cooperation has been generously given, these other agencies, too, operate under the constraint of limited resources, and hence progress has

[32] Quarterly estimates of total disposable-income and personal-consumption expenditures in constant dollars (without component detail) are published in the Economic Report of the President under current practice in January of the following calendar year. These estimates are quite crude, however, since they are obtained by adjusting the current-dollar estimates by the consumer price index.

been less than if the development of price data specifically for national accounting purposes had been an explicit assignment of these agencies. Thirdly, the National Income Division has hardly the staff required for current-value estimates alone.

However, with only a modest increase in the resources devoted to preparation of the constant-dollar estimates, a noticeable expansion in scope of the estimates could be achieved while, with the initiation of a comprehensive program, great progress could be made. For this reason and because of the fundamental nature of the uses which these estimates serve, the committee is inclined to assign to this work a very high priority among the possible additions to the national accounts. The desirability of this work is further attested to by requests from all types of users for expansion of the constant-dollar estimates.

In the committee's view, most of the uses to which constant-dollar estimates might be put would be served by annual estimates in considerable detail of the price and volume components of the current-dollar series for gross national product, subdivided both by type of expenditure and by originating industry, plus similar though more abbreviated estimates on a quarterly basis, particularly for the expenditure distribution. The following recommendations are accordingly framed with a view to the development of such data. Before presenting the detailed recommendations, however, it may be helpful to explain more fully the nature of the ultimate objective which the committee envisages.

Each element of national product, which is in the nature of the aggregate expenditure by 1 or more sectors on a given type of commodity or service, can be regarded as the product of 2 components, 1 a quantity, the other a price. The expenditure figure is always explicit. The quantity and the price component may be either explicit (i. e., they reflect observed quantities or prices) or implicit (i. e., they result from the division of expenditures—a current dollar magnitude—by either a quantity measure or a price, which in turn may be an average or an index). In many cases the two components can be measured explicitly, but their product will not yield the given expenditure figure because of differences in coverage and for other more technical reasons. Hence, in the final estimates one of the components will be determined implicitly. Wherever possible an explicit measure should also be derived for purposes of control; that is, an index of observed prices as a control of the implicit price index and an index of quantity of output as a control of the deflated expenditure figure.

If the suggestions envisaged below are accepted as a long-range goal 2 sets of 3 tables each would be published to show the relationship between current- and constant-dollar figures. The first table of the first set would show the well-known estimates of gross national product by type of expenditure in current dollars; the second would present estimates in constant dollars; and the third would show the corresponding price indexes. In every case multiplication of matching entries in the second and third tables would yield the corresponding entry in the first. To illustrate, the first part of the current value table would consist of a condensed version of the present table 30 of National Income, 1954 edition, "Personal consumption expenditures by type of product"; the corresponding part of the second table

would present constant-dollar figures for the same items as in table 40; and the corresponding part of the third, the consumer price indexes (as in table 41). Similarly, matching entries in the successive tables would be provided for various categories of domestic investment and of Government purchases, and for net foreign investment. A second set of three tables would provide the desired data on the distribution of gross national product by industry of origin. The first table, which would resemble in appearance the present table 13, "National income by industrial origin," would present the distribution in current dollars;[38] the second, the distribution in constant dollars; and the third, the price indexes.

Since the latter set of tables showing a constant-dollar distribution of national product by industry of origin would constitute a substantial innovation in the supply of constant-price data, it is perhaps helpful to recall some of the uses this set of data would serve. It would provide what are in effect indexes of output (deflated value added) for all major sectors of the economy, closing a major gap in our present body of statistical knowledge, and permitting analysis of the changing industrial structure of the economy. Thus, one might determine whether an expansion in total output was associated with a more rapid expansion of agriculture or manufacturing, of transportation or trade. On the statistical side, aggregation of the industry indexes of net output (deflated value added) would provide a largely independent estimate of total real (constant dollar) gross national product, thus providing a check on the total derived by summing constant-dollar expenditures. Equally important is the possibility of using these data together with matching data on man-hours to derive measures of output per man-hour of the economy, and to analyze the role played in these changes by different industrial sectors and by shifts of workers between low- and high-productivity industries. Such productivity analysis, which requires a distribution of constant-dollar product by industry of origin and is not possible with the distribution by type of expenditure, would be important not only in increasing our knowledge of the past and present, but also in attempting to project the future productive capacity of our economy.

The recommendations in sections 2 and 3 which follow are framed with a view to developing a body of data of this type on a limited scale in the immediate future, but in the required detail later on.

2. RECOMMENDATIONS FOR THE IMMEDIATE FUTURE

(a) *Development of quarterly estimates*

The development of a constant-dollar estimate of gross national product and its components on a quarterly basis is of very great importance for improving current interpretation of cyclical movements in our economy and for the formation of public policy. The regular preparation of such estimates at an early date appears feasible by adapting the methods presently used in preparing the annual estimates

[38] Aside from showing less industrial detail, this table might differ from table 13 in that the entry for each industry would relate to gross product originating rather than national income originating, possible at market prices rather than factor cost. The committee has not attempted to specify whether valuation should be at market prices or factor cost, or the product originating estimate should be net or gross of capital consumption allowances, since the choice at the present time must largely rest on feasibility of statistical derivation.

to the more limited price data available quarterly. Much of the necessary preliminary exploration and testing has already been done by the National Income Division. The extent of detail on expenditure components that can be published will of course be limited by the supply of quarterly price data. If, as is recommended below, the supply of data is sufficiently expanded, publication of quarterly constant-dollar estimates in detail as fine as that presented for the quarterly current-dollar estimates should be aimed for.

(*b*) *Expansion in component detail*

At present the published annual estimate of constant-dollar personal consumption expenditure is subdivided only among durables, nondurables, and services. In the actual preparation of this estimate, however, constant-dollar figures are developed for considerably narrower categories. While some of the estimates for more detailed categories are of necessity crude, some expansion in the published detail could be achieved if sufficient opportunity were available to test and strengthen these estimates by comparison with alternative sources. For the immediate future, it would be very useful if detail could be published as fine as that now given in the present quarterly (current-dollar) estimate, where, under durable goods, separate data are given for "automobiles and parts" and "furniture and household equipment," while among nondurable goods, estimates are provided for "clothing and shoes," "food and alcoholic beverages," and "gasoline and oil," and under services, data are given on "household operation," "housing" and "transportation." [34]

(*c*) *Distribution of gross annual national product between Government product, household and institutional product, and business product*

At present no regular estimate is made of the distribution of gross national product in constant dollars by industry of origin, though as indicated above, such an estimate would be very important for analyzing the growth of productivity in the economy. However, from time to time the National Income Division has prepared an estimate in constant dollars of gross product originating in agriculture,[35] and this has permitted the development of a crude industrial distribution of gross national product among gross private farm product, gross private nonfarm product, and gross Government product. These data are currently brought up to date by the Council of Economic Advisers in the Economic Report of the President.[36]

The committee favors the direct preparation and publication of these estimates by the National Income Division on a regular basis, as part of the regularly published annual constant-dollar estimates, since despite the crudity of the industrial classification, these data provide an important starting point in analyzing productivity change in the economy. Also, since the present practices used in deriving the constant-dollar estimates assume, for lack of appropriate techniques, no productivity change in the household and institutional sectors of the economy, the committee favors the separate presentation of a constant-dollar estimate for these and similarly situated sectors,

[34] E. g., Survey of Current Business, February 1957, p. S–9.
[35] E. g., Survey of Current Business, August 1954.
[36] Cf., e. g., table B–3, January 1957 report, p. 126.

so that the segment of the total product to which productivity analysis can be properly applied may be isolated. In addition, matching series on man-hour employment should be developed in cooperation with the Department of Agriculture and the Bureau of Labor Statistics, and presented along with the product estimates.

3. RECOMMENDATIONS FOR THE LONGER RUN

The recommendations listed above appear feasible within the limits of currently existing data or with only moderate additions thereto. Those listed below, however, would probably require greater expansion in underlying data and in some cases would presuppose further exploration on methodology.

(a) Expansion in detail of constant-dollar expenditure estimates

We have already noted that some extension in the detail of constant-dollar consumption expenditure seems feasible at the present time. Over the longer run, additional expansion seems desirable, particularly in the area of consumers' durables. Of even greater urgency is the development of detail on expenditures on producers' durable equipment, for which no subdivision is now presented, and on Government purchases of goods and services in the same detail as proposed for current expenditures in chapter VII, sections 2 and 3.

(b) Development of matching constant-dollar and man-hour estimates

The committee suggests a cooperative attempt (among the National Income Division, Bureau of Labor Statistics, Agricultural Marketing Service, Federal Reserve Board, and other interested agencies) to develop constant-dollar estimates of output and man-hours for the major nonagricultural sectors of the economy in as much detail as seems warranted.[57]

As indicated above, a constant-dollar division of gross national product by industry of origin and a corresponding distribution of man-hour employment appears feasible at present only for a very crude industrial distribution-agriculture, household and institutional, government, and "all other." The major gap is detail for the real product of the nonagricultural sector of the economy other than government and household and nonprofit institutions. Considerable preliminary work toward developing the desired estimates has already been done by certain nongovernmental organizations, and the Bureau of Labor Statistics has developed constant-dollar estimates of the net output of manufacturing that could be adapted for purposes of real product measurement. Further exploration is still necessary, and will be furthered by the recent formation by the Office of Statistical Standards of an Interagency Committee on Production and Productivity Estimates set up specifically for this purpose. The 1958 meeting of the Conference on Research in Income and Wealth, which will be devoted to conceptual and statistical problems in the estimation of real output, input, and productivity, should further contribute to this end. These studies together with prior work should provide the

[57] A recent examination of this problem and other issues in the measurement of deflated national product is given in John W. Kendrick, Measurement of Real Product, Studies in Income and Wealth, vol. 22 (in press, to be published by Princeton University Press for the National Bureau).

foundation for development of the desired current real output estimates in considerable industrial detail by means of the cooperative program recommended above.

Needless to say, a ratio such as net output per man-hour does not provide a measure of the contribution of labor to output. Eventually, it would be desirable also to develop measures of the capital input in each industry, but work in this area has not reached as advanced a stage as that on the measurement of real product and labor input. For this reason the committee has emphasized the latter as the primary areas for the development of official estimates at the present. Elsewhere, however, the committee is recommending work on the development of estimates of real capital stocks, and with substantial progress on the stock estimates, the development of estimates of current capital input might become feasible.

(c) Development of additional price indexes

A series of conferences should be initiated among interested users and producers to review the present constant-dollar estimates, to survey the needs for development of additional price data and indexes for use in strengthening and extending constant-dollar estimates of both national product and input-output data, and to recommend an integrated program for meeting these needs.

Though listed last among the major recommendations for the longer run in the preceding paragraphs this is in a sense the most urgent. A review of the type suggested is clearly necessary to the extensions of the constant-dollar estimates recommended above. Moreover, it is basic to improving the quality of the present estimates—estimates that have not yet been subjected to a thoroughgoing review and revision, as well as to strengthening those extensions of the estimates which are believed practicable in the near future.

The present annual constant-dollar estimates suffer from some important shortcomings. While some of these are more or less inevitable, a number are due simply to the fact that the price data and indexes presently used have been assembled for purposes other than the development of constant-dollar estimates of national accounts data. If the latter were recognized as an explicit objective, substantial improvements might be effected.

The price data presently used in deriving constant-dollar estimates do not provide comprehensive coverage of the various commodities and services included in national product. This is particularly true with respect to producers' and consumers' durables, Government procurement, and certain types of consumer and business services. This lack of data forces resort to a number of compromise solutions. In some cases the price movement for selected items is imputed to an entire group, as in the case of the special industry machinery category of producers' durable equipment; or the price movement of a good in a certain geographic area may be imputed to other areas. While such devices will always be necessary, it would be desirable to narrow their range as much as possible. Again, indexes of production costs (total or partial) are sometimes used instead of price indexes, as in the area of new construction; or indicators of man-hour employment have been used to extrapolate the base year expenditure for a particular group of items, as, for example, in the case of Government expenditures for employee services. These techniques, as the National

Income Division stresses, fail to allow for productivity change and in some cases for changes in profit margins.

If more price data of the proper type were assembled it would be possible to construct constant-dollar estimates for narrower categories of expenditure than at present, thus reducing the range of imputations necessary, and some cost or input indexes might be replaced by price indexes proper. In addition to assembling new data on final expenditures, it would be desirable to increase the collection of price data on materials and other intermediate products purchased by producers, and also to extend the body of data collected on a quarterly basis. This would facilitate implementation of some of the extensions in the constant-dollar estimates recommended above. Attention should also be given to the advantages and limitations of hypothetical price indexes for products which change materially in their makeup over a period of time. (Such indexes could be constructed by assuming a set of specifications for a finished product and by taking periodic hypothetical bids for its production from a representative group of producers.)

Finally, improvement in the constant-dollar estimates would result from the construction of price indexes with weights more appropriate to national product deflation. At the present time many of the price indexes used in deriving the constant-dollar estimates are weighted with a view to some other purpose, and this necessarily reduces their usefulness in deriving the constant-dollar estimates.

Collection of more data and the construction of new indexes will not solve all problems relating to the derivation of constant-dollar estimates, however. For certain sectors of the economy it is difficult to conceive of a physical volume measure, and the very concept of "real product" seems called in question. This is particularly true with respect to the treatment of financial services, domestic servants, nonprofit institutions, and services of Government employees. At present constant-dollar estimates for most of these sectors are derived by extrapolating the current-dollar figure in the base year by a series on factor input in the sector, a technique which involves the very questionable assumption that productivity change is zero.[28]

Some efforts have already been made to go beyond a measure of factor input in treating these sectors. In some countries an attempt has been made to develop direct indicators of physical volume of output; for example, changes in the volume of hospital services have been measured by changes in the number of people receiving medical attention. The shortcomings of this approach are obvious; the matter therefore calls for further exploration. Other investigators have attempted to measure volume of real output in these sectors by adjusting the measure of man-hour input for the productivity change registered in analogous sectors of the economy, though identification of an analogous sector would clearly be difficult. Indeed, several committee members favor the adoption of this treatment at the present time in estimating the real volume of output in the Government sec-

[28] This is not true with regard to financial services. However, the procedures followed in deriving constant dollar estimates of these services are rather difficult to interpret. For example, in the case of life-insurance companies, in obtaining the physical volume of services, the service provided is broken down into the insurance and investment components, and the former is extrapolated by the dollar volume of insurance in force, deflated by the consumers' price index, while the latter is extrapolated by the total admitted assets of insurance companies, similarly deflated.

tor, on the ground that despite the shortcomings the error would be less than that involved in the present procedure.

It is obvious that a good deal of further work is needed before agreement can be reached on reliable measures of constant-dollar output for these sectors, and the committee recommends that these problems be subjected to intensive study both within and outside the Government. The Conference on Research in Income and Wealth might wish to consider this as a special topic of study in a forthcoming program.

4. SUPPLEMENTARY RECOMMENDATIONS RELATING TO CONSTANT-DOLLAR ESTIMATES

(a) *Development of constant-dollar income estimates for different groups in the population*

There remains one major type of use of constant-dollar estimates which the foregoing set of data would not serve, namely, comparison of the level of economic well-being of different groups in the population. One wishes to know, for example, how the national income is shared between persons in high- and low-income groups, between the farm and nonfarm population, and among members of the population in different parts of the country, and what changes are taking place in the shares of these groups over time. Such information, when considered in conjunction with data on the changing numbers in these groups, is important in appraising the performance of our economy and in formulating public policy. The estimates previously discussed provide a basis for determining the change in the level of economic well-being of the population as a whole, but not for these different groups within the population.

The distributions of personal income by size of income and by State, published by the National Income Division, and the estimates of income of the farm and nonfarm population, published by the Department of Agriculture, provide an important point of departure for answering these questions.[29] They suffer, however, from the defect of being in current-dollar terms only. It is possible, of course, to convert them to constant dollars by use of a national price index, such as the implicit price index for personal consumption expenditures, and this is sometimes done. But conceptually this is inadequate, for it fails to allow for the possibility that the price level and trend differs among various groups in the population, and therefore that the current-dollar shares of these groups (which, of course, would remain unchanged if a national price index were used as a deflator) differ from their "real income" shares.

There is at the present time some information on the price level and/or trend experienced by various groups in the population. The Consumer Price Index of the Bureau of Labor Statistics refers essentially to the prices paid by wage and salary earners in the lower and middle income groups living in urban communities, and the Department of Agriculture compiles indexes on the prices paid by farmers.

[29] In passing it may be noted that there would be some merit from the point of view of convenience to users in incorporating the farm-nonfarm estimates in the national income supplement with the few modifications necessary to shift to the personal-income concept. The National Income Division estimate of the distribution of national income by industry of origin is, of course, inappropriate for the present purpose, since it does not take into account income accruing to the farm population from nonagricultural sources and, conversely, for the nonfarm population.

There have also been one-time studies of price differentials between rural and urban areas and of differential price trends in the various States.[40] But much needs to be done to improve the comparability of such indexes with the income categories distinguished in the national income accounts and to fill in gaps for groups in the population not presently covered. The extent to which development of continuous indexes stretching at least from 1929 up to the present would be desirable cannot, of course, be determined in advance, but depends on the extent to which significant price differences are uncovered as a result of such studies.

An additional conceptual difficulty arises with regard to the question of whether and how the part of personal income used for the payment of taxes and the acquisition of intangible assets should be deflated. The committee, therefore, recommends that the Bureau of Labor Statistics in conjunction with the National Income Division consider this problem as well as the possibility of developing price indexes relating to the personal consumption expenditure of various income-receiving groups in the population. Some further comments along these lines appear below (secs. IX 2c, IX 3c, and X 14).

(b) Constant-dollar estimate of net as well as gross national product

This would require the development of an estimate of capital consumption allowances in constant dollars. The committee recommends in chapter VII, section 5, the preparation of supplementary replacement cost estimates for capital consumption allowances which presuppose constant-dollar estimates. Once these are available derivation of the net product estimate will be a simple matter of subtraction from the deflated gross product total. Such an estimate would be useful in providing a better approximation to the real net output of the economy by excluding from the final product total the estimated fraction of the capital stock used up in current production.

(c) Periodic reweighting of the constant-dollar estimates

It is known that the degree of change shown by a constant-dollar measure of gross national product will be influenced by the choice of the weight-base year. For example, if relative price and physical volume movements of individual commodities are negatively correlated—as is often the case in the long run—then the rate of real output growth will be greater if the weight-base year refers to an earlier rather than later date in the period. There is no unique solution to the choice of the weight-base year, though some analysts prefer a more recent date, since it is more consonant with current experience. When first published, the constant-dollar estimates of the National Income Division were in 1939 prices, but they were subsequently shifted to a 1947 price base. The committee favors the use of fixed base weight indexes and endorses the policy of periodic reweighting in terms of more recent year prices. It also favors the occasional recomputation of a recent year estimate in prices of an early year for the purpose of analyzing the influence of the choice of the base year. If possible, development of constant-dollar estimates in 1929 prices for selected years would be helpful for this purpose, but such an estimate is of low priority compared with other needs.

[40] Cf. Nathan Koffsky, Farm and Urban Purchasing Power, Studies in Income and Wealth, vol. 11; and Abner Hurwitz and Clarence B. Stallings, Interregional Differentials in Per Capita Real Income Change, Studies in Income and Wealth, vol. 21.

(d) Extension of the constant-dollar estimates back of 1929

The committee recommends elsewhere the extension of the current-dollar estimates back of 1929. A similar extension of the constant-dollar series for gross national product and the principal expenditure components is also recommended. Not only would such data be of interest for a closer study of economic growth in this country, but it would be useful in providing a broader base for comparison than the present initial year, 1929, which from many points of view was an exceptional one.

(e) Preparation of a special supplement on constant-dollar estimates

At present very little is published on the methods and sources of data underlying the constant-dollar estimates. Preparation of a supplement to the Survey of Current Business presenting information in substantial detail is important for the proper interpretation and use of these estimates.

(f) Other proposals

A number of other proposals relating to the constant-dollar estimates were considered of lower priority, because insufficient developmental work had been done to merit their being undertaken on an official basis at the present time, or because the quantitative departure from the present or proposed estimates would be small. Among these were the development of constant-dollar estimates of factor input, obtained by adjustment of the current-dollar income estimates by indexes of factor rather than of product prices; and the development of constant-dollar expenditure estimates valued at factor costs as well as at market prices.

The committee also considered the question of developing constant-dollar estimates of certain financial flows, for example, personal saving and undistributed corporate profits. Since these flows do not relate to any identifiable product magnitude, the choice of a price index for adjustment to constant-dollar terms seems essentially arbitrary, and can be determined only with reference to the particular purpose at hand. If, for instance, the amount of saving supplied in recent years should be compared with that of the twenties, one might deflate present-dollar figures by use of a composite index reflecting the price measurement of investment goods, particularly producers' durables and construction. In this case, we measure the ability of saving to finance investments. For other purposes, other indexes may be more appropriate. For instance, if we measure private saving as a reserve for old age, or for financing children's education, or for the case of serious illness, different methods of deflation would be warranted. The committee believes that the selection of the appropriate deflators must be left to the analyst using the data. Therefore, the committee refrained from recommending any attempt to develop a general price deflator for saving.

Chapter VII. Specific Problems of Main Accounts

1. The Personal Account

The personal segment of the national income and product accounts covers essentially the consuming public, and therefore incorporates

vital information for the understanding of economic processes and trends. At the present time, the personal account includes mainly the activities of individuals and families in their capacity as income receivers and consumers. In addition, it includes nonprofit organizations, personal trust funds, and private pension, health, and welfare funds.

To make the information in the personal account more useful, four types of revisions and additions to the estimates now prepared should be made as soon as the data permit. First, the account should be deconsolidated in supplementary tables to show separate figures for households and institutions and, within the household sector, data should be shown separately for nonfarm households, farm households, and other households. Secondly, estimates of the purchases, holdings, and depreciation of durable assets of households (including homes, automobiles, and major household appliances) should be prepared in both current and constant prices. Thirdly, supplementary information should be provided on realized capital gains and losses. And, fourthly, in connection with the development of the national balance sheet, it would be desirable to have periodic estimates of unrealized capital gains and losses.[a]

(*a*) *Treatment of nonprofit organizations and funds*

Since the personal account shows the transactions of the persons and institutions in the personal sector with the other sectors of the economy, the income receipts of nonprofit organizations, personal trust funds, and private pension and related funds are included in personal receipts, and their purchase from other sectors are included in personal consumption expenditures. For the same reason, transactions between households and nonprofit institutions (except wages paid by these institutions to households) disappear altogether from the present national accounts.

The troublesome feature of the present practice is that the nonprofit organizations and financial institutions included in the personal account are organized primarily to provide services, so that they cannot be regarded as consumers. Moreover, even the treatment of financial intermediaries is not entirely uniform. The production activities of mutual financial intermediaries, such as life-insurance companies and investment funds, are included in the business sector, but the net increase in equities in such institutions accruing to individuals is, by a process of imputation, transferred to the personal sector.[a] On the other hand, nonprofit organizations, personal trusts, and private pension, health, and welfare funds are included entirely in the personal account, so that their current-account activities (regarded as consisting solely of the payment of wages and salaries) are counted as income originating in households. As a result of this rather complicated treatment, all savings accumulated for the benefit of individuals, either in their own accounts or in the accounts of funds or mutual financial intermediaries, are counted as personal saving.

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[a] Recent changes in methods of income disbursement call for a review of the methods of compensation and of withdrawing incomes from corporations. The subject is treated below in ch. X, sec. 9.

[a] Specifically, premiums and other remittances paid by individuals to life-insurance companies and other mutual organizations and cash benefits received by individuals from them are treated as though they constituted transfers among individuals and hence are omitted from the accounts, and the income and operating expenses of these intermediaries are treated as if they were income and purchases, respectively, of households.

Three possible approaches were considered by the committee to remedy the deficiencies of the present treatment.

First, the present coverage of the personal account might be retained, but personal trusts and private pension, health, and welfare funds could be treated at life-insurance companies are treated at the present time. The magnitudes shown for personal income, personal-consumption expenditures, and personal saving would remain as they are now, but the production activities of the trusts and funds would be removed from the personal account. To distinguish the incomes, savings, and investment of nonprofit organizations and financial intermediaries from the corresponding figures for households, it would be necessary to provide additional supplementary tables showing a breakdown of the personal account between households and institutions. The disadvantages of this approach are: (*a*) Nonprofit organizations cannot be regarded as households and (*b*) the motivations and operations of personal trust funds and private pension, health, and welfare funds are different from the motivations and operations of households.

Second, all nonprofit organizations and mutual financial institutions now included in the personal account might be treated like businesses, and the present imputation of the increase in equities of mutuals to households eliminated. Although this approach would clean up the personal account, it would be inappropriate to treat the savings of nonprofit organizations, and particularly of mutual financial intermediaries, in the same way as the undistributed earnings of corporations.

Third, all nonprofit organizations and mutual financial institutions (including mutual life-insurance companies and investment trusts) might be combined into a new sector having its own articulated account. The advantage of this approach is that it would combine into a single account all mutual financial intermediaries and other institutions not in corporate form managing funds that belong to individuals or that eventually are paid to them in the form of pension, health, or welfare benefits. However, this improvement would be obtained at a substantial price, since the addition of a new articulated account would complicate the national income and product tables and would require the estimation of some crossflows between the new account and the other accounts which have relatively little practical significance, although other crossflows that would be shown for the first time are of considerable size and interest.[48]

Although a solution that would satisfy all theoretical as well as practical requirements is not possible, a majority of the committee felt that, on balance, the first approach should be adopted. In arriving at this decision, the majority was fully aware that the third approach would provide an accounting structure that better fits the realities of the Nation's economic organization. However, it was persuaded that the practical difficulties of setting up a new articulated account out-

[48] Among the complications created by this solution are the following: (1) A separate line would appear in the product table showing the imputed value of the services provided without charge by nonprofit institutions; (2) expenditures that are now included as a single total in personal-consumption expenditures (e. g., the cost of education provided by nonprofit schools and colleges) would be divided between personal-consumption expenditures and expenditures by nonprofit organizations; and (3) transfers from government and business to nonprofit organizations and institutions would have to be taken into account explicitly in reconciling gross national product and personal disposable income.

weighed the advantages that would be derived, particularly since it is possible to provide adequate breakdowns to permit the separation of the activities of institutions and households. Moreover, the transactions of the institutions and mutual organizations that might be included in the new account, though important, are small relative to the totals for the economy as a whole. Finally, no other country has a separate account for nonprofit institutions and mutual organizations, so that the change would not contribute to international comparability.

Accordingly, the only change we recommend is that personal trusts and private pension, health, and welfare funds be treated as life-insurance companies are now treated. However, we strongly urge that separate receipt and outlay tables be provided, at least on an annual basis, for each of the major categories of organizations in the personal account—particularly for the financial organizations on the one hand and for institutions like churches, labor unions, foundations, and colleges on the other—so that the user can make the combinations that best meet his needs.

There are no very serious statistical difficulties in obtaining separate data on the receipts and outlays of nonprofit organizations and private pension, health, and welfare funds. The committee recommends, therefore, that this be done immediately. However, the data on personal trust funds are still too poor—particularly for the funds not administered by banks and trust companies—and not sufficiently current to make this separation feasible at the present time. When data are available—and every attempt should be made to obtain them in the near future, in the interest of providing the basis for more adequate analyses of the capital markets—the receipts and outlays of personal trust funds, at least those administered by banks and trust companies, should also be shown separately.

The committee has also considered the possibility of transferring the Government retirement and other employee trust funds to the personal account, since the operations, at least of the State and local government retirement funds, are fundamentally similar to the operations of private pension, health, and welfare funds. We believe, however, that, on balance, it would be desirable to keep Government retirement funds in the Government account, particularly those of the Federal Government. In the first place, the largest of the Government funds—the Federal old-age and survivors insurance trust fund—is sufficiently different from private pension funds to warrant separate treatment. In the second place, transferring Government funds to the personal account would introduce still another deviation between the official figures on cash receipts and expenditures of Government agencies and the corresponding figures for Government in the income and product accounts. Moreover, the receipts and outlays of Government funds are already shown separately in the national income supplement in sufficient detail to permit interested users to treat like private funds all Government retirement and other employee trust funds (including Federal, State, and local funds) when this is preferable for their purposes.

(b) Classification of households

Eventually, the national accounts should provide separate estimates for the transactions of at least three major groups of households in the personal sector: (1) Households of farm entrepreneurs; (2)

households of nonfarm entrepreneurs (including, and possibly separating, the households of self-employed professionals); and (3) other households, i. e., primarily those of wage and salary earners and retired persons. Unfortunately, data are not yet available to make such a subclassification to a satisfactory degree of accuracy.

A first step in this direction has, however, been taken in the survey of farmers' expenditures in 1955 by the Department of Agriculture, which, on the basis of a sample of farm households, provides an estimate of farmers' personal and business income and expenditures. The committee endorses the attempts of the Department to put this survey on an annual basis, and urges that the results be made available in time to be used in the preparation of the annual national income and product estimates, i. e., not later than the middle of the following year.

Difficulties are admittedly much more serious in the case of nonfarm entrepreneurial families, even if no effort is made to separate business from household activities. (See discussion in ch. V.) No attempt that has as yet been made to obtain income and expenditure data for this group of economic units has been really successful. These units are, however, so important for many aspects of national accounting—not to speak of their importance for economic and social policy—that these attempts must be continued and, indeed, must be accelerated and intensified, as will be stressed in chapter XI, section 2 (*a*). Until satisfactory data become available, all nonfarm households will have to be retained as a sector of the personal account without distinction between entrepreneurial and other nonfarm families.

So long as there is reasonable hope of obtaining data on nonfarm entrepreneurial families, the committee is loath to recommend as a compromise a shift of business income and expenditures of nonfarm entrepreneurs to the business sector that would involve estimating—rather arbitrarily—proprietors' withdrawals as the bulk of nonfarm entrepreneurs' income in the personal account.

Another breakdown of the personal account that is important for economic analysis is a classification, by size, of family income. The available size distributions are based, to a large extent, on meager data, and a substantial effort should be made to improve the statistics underlying them. Our recommendations for making the necessary improvements are contained in chapter X, where the problems of constructing income-size distributions are discussed in some detail.

(*c*) *Treatment of consumers' durables*

Outlays on consumers' durables other than houses are now treated as current expenditures and, hence, are not taken into account in the calculation of saving or capital formation.

Some members of the committee regard this treatment as unsatisfactory for at least five reasons. First, treating consumer durables as current expenditures runs counter to the principle that whatever is regarded as part of reproducible national wealth—and few would exclude items like automobiles, household appliances and furniture—must also be included in capital expenditures. Second, since the services of consumer durables outlast the period in which they are purchased it may be, and often is, misleading and exaggerates fluctuations in actual consumption if a year's purchases are equated with the services of the stock of consumer durables. Third, exclusion of consumer durables from capital formation violates the principle of invari-

ance. As consumers switch from patronizing streetcars and commercial laundries to the use of their own automobiles and their own washing machines the national accounts register a decline in capital formation though in reality all that has shifted is the ownership of the stock of urban transportation or laundry services. Fourth, one important category of consumer durables, household machinery, has become so much an integrated part of the house that a distinction between the bare frame of the house and the equipment in it appears to be arbitrary. Fifth, consumer durables are often bought on credit. To regard an increase in debt on consumer durables as dissaving but not to include the acquisition of the durables themselves in saving is not likely to lead to figures useful in the analysis of the saving process or the capital market.

In all these respects consumer durables appear to be entirely similar to owner-occupied homes. These, however, are capitalized in our present national income accounts, i. e., they are excluded from current expenditures, but instead, depreciation allowances are added to current expenditures and estimates of the use value (equated to imputed net rent) is added to consumer income. Mortgage debt on owner-occupied homes is, of course, treated as a component of dissaving. The committee minority would like to see the basic economic similarity between the major consumer durables and owner-occupied homes recognized by equality of treatment in the national income and product accounts.

The majority of the committee, however, felt that it would be better to leave the accounts as they are on the ground that the change would, on balance, lessen the usefulness of the basic figures for purposes of economic analysis. In the first place, many items purchased by consumers last more than 1 year (e. g., pots and pans, linens, house furnishings, tennis rackets, clothing, etc.), and it would clearly be undesirable to regard many of them as capital expenditures. Any dividing line that would be drawn between goods bought by consumers that should be capitalized and those that should be treated as current expenditures must inevitably be arbitrary. Second, few consumers regard their outlays on durables as savings. Thus, most people would find it hard to interpret a figure for consumer expenditures which excluded outlays on an arbitrary list of durable goods and included depreciation on such goods. Third, the fact that some consumer durables are purchased on credit hardly distinguishes these consumer purchases from many others. In recent years, credit for financing the purchases of services and goods that are now classified as nondurables has risen sharply. From the standpoint of setting up balance sheets for households, it would be impossible accurately to allocate consumer debt (other than mortgages) to particular assets except on a rather arbitrary basis. Finally, it would be possible to show in supplementary tables the purchases, stocks, and depreciation of selected consumer durables to enable users to treat them as capital expenditures, without impairing the simplicity and clarity of the data on consumer expenditures.

Although the committee is divided on the appropriate treatment of consumer durables, it is unanimous in recommending that the national income and product tables should provide an integrated set of estimates of purchases, stocks, and depreciation allowances of the

major consumer durables. This would enable users who so desire to calculate a broader measure of capital formation and personal saving than is now currently available. Users who want also to allow for the use value of the stock of consumer durables to complete the parallelism with the treatment of owner-occupied houses would, however, still have to make their own estimates, as the majority regards these as too speculative to be undertaken by a Government agency.

(d) Treatment of capital gains and losses

Some very important problems are posed by the treatment of capital gains and losses, both realized and unrealized. Since they concern mostly the personal account, though they also affect the business and government sectors, they are treated at this point in the report.

At present, realized and unrealized capital gains and losses are excluded from the national income and product accounts—as well as from other segments of the system of national accounts—on the argument that capital gains and losses do not reflect output; nor can they be regarded as transfer payments. (The latter interpretation would be possible only in cases, such as gambling gains and losses, in which one party's gain must be at least balanced by another party's loss.) This treatment may satisfy those who regard the national accounts exclusively as a measure of output of the economy. It is difficult to reconcile with the fact that both realized and unrealized capital gains and losses may, and probably do, affect the behavior of consumers and producers; and with the further, and possibly more significant, fact that realized capital gains and losses represent additions to or reductions in recipients' purchasing power which are quite similar in distributional effect and in some, but not all, other respects to their ordinary income.

Although the committee does not recommend a change in the concepts of national income and product, we suggest that an effort be made to provide estimates of realized and unrealized capital gains and losses in view of their significance for many types of economic behavior and analysis, both in the short and in the long run, as well as for economic policy; and, because of the importance of the figures, for a reconciliation between cumulated current saving and changes in the current value of assets and net worth.

We recommend, therefore, that the National Income Division should develop estimates of realized capital gains and losses for each sector, distinguishing the main types of assets on which such gains and losses arise, i. e. primarily corporate stock, real estate, and inventories. (In the latter case, the necessary estimates are already being made by the National Income Division in the form of the inventory valuation adjustment.) The main source for these estimates will be Statistics of Income, but more detailed tabulations than are now available will be needed. These estimates will have to be prepared in such a form that they can be combined with current income in the computation of a broader concept of income. The preparation of statistics of income including and excluding capital gains and losses is particularly important for distributions of personal income by type and by size.

Attempts should also be made to develop estimates of unrealized capital gains and losses, possibly by the organization which will pre-

pare national balance sheets. These estimates should be made for each sector distinguished in the system of accounts and for each of the major types of assets subject to substantial fluctuations in value. This would exclude claims and liabilities having a fixed value if calculations are carried through in current prices, but would have to include them if the estimates are expressed in constant values because in that case unrealized capital gains and losses will arise also for assets and liabilities which are collected, or discharged, at face value. All these estimates of unrealized capital gains and losses will necessarily have to be very rough; but they are important enough, e. g., for the explanation of changes in the distribution of wealth, to justify the effort to tie them into a system of national accounts.

2. THE GOVERNMENT SECTOR

(a) Conceptual problems

(1) *Government domestic interest payments.*—In the United States system of national accounts, interest payments on the Government debt are excluded from the income and product total in the same way as transfer payments. While few disagree regarding transfer payments, there are substantial differences of opinion concerning the treatment of interest payments. The committee has not tried to produce a final theoretical solution of this problem. We are setting forth first arguments advanced for treating Government interest payments like transfer payments then arguments for regarding all interest payments as factor costs. While the committee was not unanimous on this theoretical question, the great majority agrees in its practical recommendation which will be presented later in this section.

The following is the trend of thought which leads to the treatment of Government interest like transfer payments.[14] Transfer payments are excluded from gross national income and product totals because these payments have no counterpart in the production of goods and services in the same accounting period. The criterion does not depend on whether or not the relief recipient or the veteran has "earned" these payments by his previous services, but rather on whether these payments were received in the accounting period, without a corresponding production or service in that period.

A similar reasoning has been applied to the interest on the war debt. Both wtih respect to the care of war veterans and the cost of borrowing an argument could be made that these expenses should be considered in a computation of the costs of a war. Nevertheless, after the war is over, payments to war veterans and payments to the holders of war bonds are made for a service in a period of the past; there is no counterpart in production during the years when these payments occur.

The suggestion that interest payments on the war debt should be treated like transfers originated in the post-World War I period. It was argued that the inclusion of interest on the war debt as a part

[14] Some theorists have taken the position that all interest payments by producers are essentially like dividends, i. e., a distribution of profits. In this view it might be proper to consider both interest and dividends as transfers in the system of national economic accounts. Government interest would then also be viewed in this light and considered as a redistribution of income collected by taxes. Consumer interest in such a theory could either be considered as a transfer or a payment for specific services. The majority of the committee has not accepted this line of reasoning.

of national income would lead to absurd results. Could one say that a country becomes poorer by avoiding or redeeming a war debt by high taxation or wiping out a war debt by inflation, repudiation, or currency reform? Or could one say that a country becomes richer if it raises the interest rate on all war bonds?

Certainly, all such measures would affect total production of goods and services favorably or unfavorably. These effects are measured by the usual estimates of total income and production. In this view, there is no additional effect which should be measured by counting interest payments on the war debt as a payment for a current factor of production.

The question must then be asked why are interest payments on, e. g., bonds issued by an industrial enterprise included in the national income and product total? The reason is that generally there exist tangible assets which have been financed by bonds and these assets contribute their services to production during the period when interest is paid. Thus, there is in this case, a simultaneous counterpart to production which would be neglected if interest payments on commercial debt were not included in income and production totals. This is apparently the reasoning why the National Income Division makes the distinction between payments of Government interest and private interest. The assimilation of Government interest to transfers thus rests exclusively on the argument developed with respect to the war debt. How about the interest on Government debt issued for financing assets, such as roads or schools or municipal waterworks that contribute services to current production?

Proponents of the opposite view, who recommend that all payments for interest be treated as factor payments like salaries and wages, do not face this difficulty. They argue, in the most general way, that no Government or private individual or business firm is willing to pay a price unless a service is rendered worth the price. Thus the fact that interest is paid proves that there must be a service performed and that there is no need to search any further to find out what kind of contribution to the national product has been made.

Those who argue for inclusion of all Government interest in national product, but are not satisfied with the mere fact of market acceptance as justification for treating all Government interest as a factor payment, have advanced two different reasons. Some have suggested that the community which approves borrowing for wartime purpose determines that it prefers investment in war to investment in factories or roads. Government interest payments thus would reflect the services of defense and self-preservation arising out of the war—services which might otherwise have reflected investment in civilian economy. If it is asked how such interest commitments would be considered if war should bring defeat, proponents argue that in that contingency the interest on the war debt would be comparable to that on a business investment which turned out to be a failure. If interest is paid under those circumstances, so the reasoning continues, it represents the price which the community is willing to pay for an asset, namely, for avoiding the undesirable consequences of repudiation. The asset is the preservation of confidence in the Government's credit, and possibly the currency, which would be impaired by repudiation in one form or another. This seems a farfetched argument, but it maintains the criterion that there must be some use-

ful, even though imaginary, asset corresponding to the debt and that the interest payment is considered to be equivalent to the service of that asset.

The second argument raises an even more fundamental question. It denies the necessary and direct relationship between financial claims and tangible assets, between income and production. Rather, incomes are considered to be derived on the basis of contracts. A worker earns his wage on the basis of a contract. Even if he should (unnoticed by the employer) idle on the job and make no contribution to production, he still receives his wage. An inventor who has sold a patent may receive royalties under a contract even if it turns out that his invention is not used. Likewise, an investor in private obligations acquires a claim for interest payments irrespective of whether or not the firm has succeeded in making productive use of the capital. There is a relationship between incomes and production in the economic process, but that relationship is too complex for use in distinguishing between payments for factor costs and transfer payments, or between incomes received from current production and transfer incomes. In the last consequence, this view leads to the conclusion that national economic accounts can only depict the flow of funds and that it is futile to try to identify and separate the payments and receipts which represent production of goods and services and their disposition.

Most members of the committee, while recognizing the logical consistency of this position, believe that the purposes for which national accounts primarily are used cannot be served merely by tracing a flow of funds without relationship to production and disposition of goods and services, and that such a mere description of flows without distinction of their economic character does not satisfy even the requirements of business accounting. They acknowledge that relating the flow of funds to production requires some more or less arbitrary assumptions for which no more can be claimed than that they are reasonable and useful in economic analysis. It is true that there are exceptions to the rule that interest payments on private debt have a counterpart in a contribution to production in the same accounting period; it is also true that the interest payments may not always adequately reflect the real contribution to production. Nevertheless, there is no better and simpler method available for accounting for the services of the assets financed by credit. The interest on the war debt however is too large an item—it is now on the order of $5 to $6 billion a year—to be considered just another exception to the general correspondence of interest payments and continued contribution of an asset to production.

The committee generally, therefore, does not disagree with the present practice of treating the interest on the war debt like a transfer. It does object, however, to the practice of treating interest on all other Government debt, particularly on the State and local debt, in the same way. Since by far the largest part of the Federal debt is the war debt, it is not a matter of urgency to attempt a separation between the part of interest payments which must be attributed to the war debt, those which must be attributed to deficits in current accounts, and those which reflect the acquisition of assets contributing to current national product. The committee is willing to accept for the present the National Income Division's treatment of Government interest as

far as the Federal interest payments are concerned. The State and local debt—approaching $50 billion—involves estimated annual interest payments of more than $1 billion, to which the war debt argument does not apply. The committee recommends, therefore, that in the future, the interest on State and local debt be treated as a part of the income and product totals on the assumption that they reflect the continuing contribution to production of assets financed by the issue of these loans.

This proposal is advanced as a practical interim solution. It cannot be regarded as the final answer because this solution still does not account for the services of Federal assets in general and of those State and local assets which have been financed by current revenues. A final solution consistent with the treatment of interest in the private sector would include that part of Federal interest payments which could be regarded as reflecting the services of Federal assets; and an imputed interest payment for those State and local assets, on the basis of the interest rate actually paid for the assets which have been financed by borrowing. Such a more nearly complete accounting for the services of all Government assets should be adopted only after an inventory of Government assets has been obtained in connection with a comprehensive national wealth and balance sheet account. (See ch. VIII, sec. 2c and ch. XIV, sec. 5.)

(2) *The treatment of Government transfer payments and payments of Government interest abroad.*—The present treatment of Government transfers to and from foreign countries in the National Income Division's statistics leaves much to be desired. At present, Government transfers to and from abroad are netted and included among Government expenditures on goods and services. Government payments to and from abroad include two kinds of transactions: First, grants of funds or drawing rights which essentially facilitate other countries' imports from the country giving the transfer or from third countries; and second, transfers in kind, e. g., goods given by one government to another.

In the case of consumer transfer payments, the transfer is recorded as an income item or source of funds to the individual consumers receiving the transfer payment, and the resulting expenditures by consumers are reflected in gross national product. If the same treatment is followed for international government transfer payments, the transaction would be recorded in the Government account as a transfer and in the international trade account as a payment to abroad. If the transfer were in the form of credit or cash, the foreign country would be recorded as using this credit or cash for the purchase of exports, much as in the consumer account the recipient uses his transfer payment for consumer expenditures. If the payment were one in kind, the same fiction would be maintained. In the case of military aid, exports would show the shipment of munitions as a transfer payment recorded on the other side of the ledger. In cases where the Government drew down existing assets, e. g., defense goods, it would be necessary to show this as sales by the Government to abroad in the Government account much in the way other surplus sales are shown in the Government account. They would also, of course, appear as exports to the countries receiving the transfer in kind.

By treating transfers by the Government to and from abroad in this manner, greater explicitness would be introduced into both the

Government account and the international trade account: the export and import figures would reflect the actual movement in goods and services, and transfers would be shown in their proper role as part of the financing of such movements.

The proposed change in the presentation of international transfers in the Government account should correspondingly be applied also to other transactions such as the payment of interest to foreign holders of Government bonds. At the present time an inconsistency exists in the treatment of Government interest payments in the balance of payments and the rest-of-the-world account on the one hand, and in the Government account on the other. In the international account, payment of interest, irrespective of whether on private or Government loans, is treated as paid for a service; in the Government account, it ih treated as a transfer.

If we think in terms of a worldwide system of economic accounts, Government interest paid or received should be treated the same irrespective of the residence of the bondholder. For a national account, however, one can see some justification for treating Government interest paid to a foreign bondholder differently from that paid to a domestic bondholder.

Nevertheless, in the interest of consistency, the committee proposes that property income paid to or received from abroad be subdivided between Government interest transactions and all other property income transactions. Government interest received from abroad should not be included in the amount of export and service receipts which go to make up the property income segment included in gross national product (cf. ch. V). This recommendation is complementary to the proposal that Government interest payments, like all transfer payments, should in general be excluded from Government purchases of goods and services, but that an imputed allowance for the current service of Government assets should be made.

(3) *The problem of intermediate Government services.*—One of the most difficult conceptual problems of national economic accounting is the propriety of including all Government expenditures for goods and services as component parts of the gross national product. It has been much debated in the guise of the appropriate treatment of "intermediate" Government services.[45]

The argument is that some Government services become embodied in the value of private goods and are counted twice under present practice, once in the production of private goods and once in the value of goods and services of the Government. Without passing on the theoretical merits of the case the committee believes that an attempt to differentiate intermediate from final product in the Government account would give rise to too many controversial questions of classification to be embodied in the near future into the official national accounts. The committee also is uncertain whether the refinement resulting from eliminating a possible source of double counting would outweigh the possible introduction of additional sources of error. After weighing the arguments on both sides the committee thus decided it could not endorse separation and exclusion of intermediate Government services from national product.

[45] See, e. g., Studies in Income and Wealth, vols. 1, 1937; 20, 1957; 22 (in press).

However, the committee recommends that an attempt be made, preferably by a private research organization, to work out, both in general and in quantitive terms, a separation between Government services whose benefits accrue to the individual consumer, nonprofit private institutions, business, or other governmental units, and those services (e. g., national security, tax collection, and other administrative expenses) which do not fit into such classification by beneficiaries. Once such a distribution were successfully worked out, so that it could be kept up to date in the official national accounts, analysts would be enabled to make their own adjustments in the Government account and in the national product and income total.

(4) *Current surplus of Government enterprises and subsidies.*—The National Income Division's system of accounts treats subsidies, i. e., monetary grants provided by Government to private business (including payments to farmers) differently from transfer expenditures. The subsidies are considered to be included in the gross return of business, and, therefore, reflected in profits and farm incomes. A compensating deduction is, therefore, made in computing the gross national income. With this treatment of subsidies we do not disagree.

However, the National Income Division deducts the subsidies from the current surplus of Government enterprises and enters only the net figure in its national accounts, with the result that neither subsidies nor profits of Government enterprises are shown separately. The committee recommends that subsidies and profits (or losses) of Government enterprises be entered separately in the gross national income and product account in a manner parallel to the treatment of transfer receipts of corporate and noncorporate private enterprises.

The National Income Division justifies the present netting of subsidies and current surplus of Government enterprise by the difficulties in ascertaining the subsidy payments to Government enterprises. We recognize these difficulties, but recommend that an effort be made to obtain the data needed for a separate estimate of these items, each of which is of interest to the analyst.

(b) *Classification of Government expenditures*

A functional classification of Government expenditures should be developed which is applicable not only to Federal, but also to State and local government. For the Federal Government the functional classification system appears to be well developed. However, the same definition for "national defense" expenditures should be used both in the budget and in the national accounting classification. Procurement for military foreign aid should be shown as a special item under national defense expenditures but in such a manner as to make it clear that it is not included in the gross national product summation. United States representatives to international organizations should attempt to have the same definition also used for purposes of international comparison. If, for certain reasons, different classification systems are needed for domestic purposes and for international comparison, a reconciliation should be published in the national income supplement.

Special analysis D of the Budget Document separates current expenditures, outlays for aid and development programs, and additions to Federal assets. We propose that a similar classification of Government expenditures be adopted for the national accounts. Some of

the data in special analysis D are on a net basis—that is, capital expenditures are shown after deduction of certain revenues. For the national accounts, however, an attempt should be made to present, as far as possible, gross outlays for the acquisition of assets.

The additions to Federal assets should separate those for defense and those for nondefense purposes. Additions to defense assets should further distinguish between: (*a*) Military construction and construction equipment, (*b*) weapons (all "hardware" from bullets to battleships), and (*c*) inventories such as strategic stockpile.

Outlays for nondefense assets of the Federal, State, and local governments should be subdivided by major functions and by the character of the capital goods acquired, particularly distinguishing acquisition of new reproducible assets (structures, equipment, inventories), existing tangible assets (e. g., land) and financial assets. Grants or subsidies used for financing additions to assets held by private institutions, farms, and business enterprises should be shown separately. The classification of capital outlays should, as far as possible, dovetail with the classification of the asset accounts (see subsection (*c*) below) so that the asset account can be kept up to date.

The committee emphasizes that its proposal for developing information on the additions to assets of various kinds should not be interpreted as a recommendation for setting up a capital budget. The committee's proposal aims at providing useful information concerning government transactions within the perspective of the economy as a whole. There is no intent to provide a breakdown of expenditures which in itself leads to conclusions about the desirability of expenditures or methods of financing.

In order to provide more detailed information, particularly for the purpose of computing national input-output tables, it would be most desirable if Government expenditures (either on an accrued expenditures or cash expenditure basis) could be classified by (*a*) programs, and (*b*) detailed object classification. The object classification should fit in with the standard commodity classification (standard industrial classification) and should give somewhat more detail than the present object classification used for obligational authority in the Federal Budget. Such finer cross-tabulations should be of value for progress reports on various programs. At the same time, they would permit a more detailed economic analysis of Government operations and would be essential for the computation of input-output tables.

The committee has been advised that it would not be feasible to prepare such a cross-classification of expenditures by coding and processing checks issued in the Treasury Department, but that tabulations would have to be prepared on the basis of the accounts of the individual agencies. Such a classification, if held desirable, would have to be considered by the Bureau of the Budget, Treasury, and General Accounting Office within the framework of the joint accounting program. The committee therefore recommends that the feasibility of the cross classification be explored by that group.

In order to utilize these asset breakdowns, and the segregations of durable expenditures in particular, in developing a capital account for Federal, State, and local governments another step is necessary—the calculation of depreciation allowances on tangible Government assets, allowances which can be subtracted from durable expenditures

to yield a figure for net capital formation, parallel to what is now called net private domestic investment in our official national income and product accounts. Since most of the Government agencies involved do not themselves provide figures on capital consumption allowances—there are exceptions, e. g., the Atomic Energy Commission—the depreciation allowances will have to be calculated by the national income estimators, as is already done in the case of depreciation allowances on owner-occupied residences. This calculation presupposes, in addition to assumptions about the length of useful life of the different types of Government durables, the existence of estimates of the stock of Government assets, and this is closely related to the problems connected with the derivation of a balance sheet for the various governments discussed below under (*c*).

Because of the difficulties in setting realistic rates of depreciation and obsolescence for military durables (weapons) the committee proposes that they be treated in the main set of national income accounts as "used up" immediately after delivery, i. e., that they be excluded from the asset account. Because of the size of the amounts involved relative to total national capital formation we suggest, however, that users of the national accounts also be furnished with an alternative estimate, possibly prepared outside the Government, in which expenditures on military durables are capitalized, i. e., removed from current expenditures but appear in the current account in the form of use value on the income side aid of depreciation allowances on the expenditure side.

Thus, Government expenditures should be classified:

(1) by functions and programs;

(2) by character, e. g., outlays for current administration, for aid and development programs, for additions to assets. The additions to assets should be further classified, as far as feasible, in the same categories as one suggested for a classification of assets in the next section;

(3) by objects (in accord with the Standard Commodity Classification).

For the most important items, cross-classification (e. g., outlays for assets by functions) would be desirable.

(C) (*k*) *Estimate of Government assets*

The committee recommends in chapter XIV that there be developed a system of national balance sheets. Estimates of Government assets would have to form an important component part of such a system. The development of such a system requires inclusion of asset information in the Census of Governments and otherwise adding to present information concerning assets of the Federal Government. The Government assets should be broken down:

(1) By jurisdiction (Federal, State, local, autonomous authorities of various kinds).

(2) By character (land, structures, equipment, commodity inventories, financial assets).

(3) By functions (agriculture, education, health, transportation, general administration, etc.).

(4) By location (for Federal physical assets only—continental United States with possible classification by regions or States; island possessions; foreign countries).

Cross-classifications are essential for (1) and (2), and (2) and (4) and desirable for (1) and (3), and (2) and (3).

For the Federal Government, the General Services Administration in cooperation with the various executive agencies has compiled an inventory of real property owned by the United States, subdivided by agencies, type of property, and location.[46] This report covers a large part of the federally owned assets, but is based on original cost without allowance for depreciation or changes in prices.

With respect to equipment, it is probably possible to estimate an inventory with sufficient approximation on the basis of an adequate breakdown by objects by using the so-called perpetual inventory which consists of cumulating and depreciating expenditures on durables. The committee, therefore, feels that more detail on the classification of expenditures, particularly durables, deserves higher priority than an inventory of nonfinancial assets of the Federal Government, other than real estate. It may also be desirable to collect directly from governments or with the help of appraisals, sample information on useful life, and similar data which would be of help in estimating inventory magnitudes on the basis of purchases of equipment.

For State and local governments, no data on nonfinancial assets are now being collected. The committee recommends that the Government Division of the Bureau of the Census be asked to explore what records concerning assets are available in the hands of State and local governments. Depending upon the outcome of such explorations, consideration should be given to the inclusion of questions concerning nonfinancial assets of State and local governments in a future Census of Governments or to conducting a special sample survey in between census years. (For a discussion of these and other questions concerning the improvement of data with respect to State and local governments, see ch. XI, sec. 2e.)

(d) A problem of presentation

There is a difficult problem with respect to the most useful presentation of the Government sector in the system of national accounts. The importance of this problem results from the fact that national accounts have been used for presenting the budget estimates in the perspective of the national economy as a whole. This was the purpose of the tables on the Government budget and the Nation's budget which appeared for a few years in the President's budget messages. In some countries (e. g. France and some Scandinavian countries) such a connection between budget proposals and the national accounts is even required by statute.

This very important use of national accounts is impaired by the fact that the data presented in the Government sector of the accounts differ from the data which can be found in the Government budget. This is true of the consolidated Government receipts and expenditures accounts, as presented in table IV of the annual National Income supplement. The differences are more drastic in the gross national product tables and the summary tables of the national income and product accounts which include in the Government sector only Government purchases of goods and services.

[46] For a summary, see Inventory Report on Real Property Owned by the United States Throughout the World as of June 30, 1956, Committee on Appropriations of the U. S. Senate, 85th Cong., 1st sess. Document 25, February 11, 1957.

The differences result primarily from the exclusion of transfer payments and the acquisition of land and existing assets and from the use in the national accounts of actual data wherever feasible instead of budget estimates. Thus, we have, in addition to the so-called conventional budget concept and to the consolidated cash concept of the budget, a national income and product accounting concept of the budget. This situation has resulted in considerable confusion.

As a minimum, there should be published in each annual national income issue of the Survey of Current Business a reconciliation between the budget data, especially for the Federal Government, and the estimates included in the Government sector. It would also be desirable if each Federal budget would give for the past, the current, and the ensuing year the budget data in a breakdown which permits translation into the Government sector concepts of the national income and product account. The same applies to the publication of State and local budget data by the Census Bureau.

In addition it is necessary to continue to show separately the Government payments for both purchases of goods and services and transfer and interest payments. National accounts are often used for distinguishing the economic transactions which are subject to market fluctuations from those which are determined by Government. For purposes of an economic stabilization policy, for example, it would be erroneous to include transfer incomes as a part of other personal incomes but to exclude it from the Government sector. An increase in transfer expenditures generates additional personal income and consumer spending similar to an increase in, say, wages resulting from expenditures for public works.

It would be desirable therefore if, in an additional summary table, national accounts were presented in a manner in which the Government account, subdivided by Federal and State-local transactions, would show both expenditures for goods and services and transfer payments even though only the goods and services would be included in gross national product. Correspondingly, personal incomes would be subdivided into incomes derived from current production and transfer incomes with only the first included in a summation of total gross incomes. Table E of chapter V is a variant of such a summary table based on the revised form of accounts proposed by this committee.[47]

3. THE FOREIGN TRADE AND PAYMENTS ACCOUNT

The rest-of-the-world sector in the United States national accounts, like the other sector accounts, was originally designed to derive the income originating in the rest of the world, so that it could be added to the income originating in other sectors of the economy to yield national income. For this reason, special attention was concentrated upon items important to the derivation of the income originating in this sector. Imports were netted with exports and factor income was netted with factor payments to derive net foreign investment. However important this procedure was in the development of the national income aggregate, it has left a great deal to be desired in the develop-

[47] For another presentation, see the Economic Report of the President, January 1957, table E6, p. 129, or, in an improved form, Studies in Income and Wealth, vol. 20, p. 126.

ment of national income and product accounts for analytic purposes. To be useful for these purposes, the flows in the accounts should be set forth in such a manner that their behavior over time will be easily discernible. The rest-of-the-world account in its present form is particularly unsatisfactory in this respect. Furthermore, it requires considerable labor to integrate the entries in the rest-of-the-world account with the balance of payments published by the Department of Commerce and the balance of payments manual published by the International Monetary Fund. For students working in the field of international economics, it is extremely important to be able to move easily from the international trade and financial statistics into the domestic accounts of individual economies. At the present time it is not easy.

Some of these objections relate to the classification system and form of presentation used rather than to the concepts employed in the account. But the form of the presentation is not unimportant. As has already been pointed out in section V, the aim should be complete integration between the national income and product account dealing with foreign transactions and the published balance-of-payments tables.

The committee, therefore, recommends that the rest-of-the-world account be redesigned as a foreign trade and payments account, dealing with international transactions in gross terms. One side of the account would show receipts from the sale of goods and services transfers received, and the surplus of foreign countries with the United States on current account. The other side of the account would show payments for imports of goods and services and transfers to abroad. The account thus drawn up, showing figures for the year 1953 as an example, is shown below.

Foreign trade and payments account for the United States, 1953

[In billions]

1. Exports	$21.3
(a) Merchandise	16.5
(b) Shipping, tourism, etc	2.9
(c) Labor and property income	1.9
2. Transfer payments to individuals from abroad	0
3. Transfer payments to Government from abroad	.1
4. Surplus of foreign countries with United States on current account	1.9
Receipts from abroad	23.2
5. Imports	16.4
(a) Merchandise	11.0
(b) Shipping, tourism, etc	5.0
(c) Labor and property income	.5
6. Transfer payments from individuals to abroad	.5
7. Transfer payments from Government to abroad	6.3
Payments to abroad	23.2

It will be noted that in this account transfers are shown as receipts and payments in the international account. This differs from the current United States procedure, where transfers from consumers and Government to abroad are shown as current expenditures on goods and

services by consumers and by Government. Also, they are now shown on a net basis, thus often obscuring the actual amounts involved.

Transfer payments should appear in the international account, irrespective of whether the transfers are in goods and services or in financial claims. Transfers in kind should be reflected not only as transfer payments but also as exports of goods. In instances where the Government gives to other countries goods which it had accumulated in a previous period (e. g., defense goods), they should be treated as sales of surplus goods by the Government, and also included in exports of goods. When consumers send gifts in kind abroad, they should not be included in consumers' expenditures, but should be classed as exports of merchandise.

In this area, in particular, it is important that the Department of Commerce coordinate the treatment of the individual flows in the international accounts with the International Monetary Fund, the United Nations, and the Organization for European Economic Cooperation to insure comparability with the data of other countries and to facilitate the provision of information to these groups on a comparable basis. There may be points, however, where, after due consideration, it is decided that, in the interests of internal consistency and the principles of national accounting, the principle of international comparability may have to be given up. One point in particular deserves mention. Since the committee has decided that Government interest should be treated as a transfer payment, interest paid by the Government to abroad and interest received from foreign governments should also be classified as transfer items in the national-income accounts. This treatment is not consistent with the present treatment in the balance-of-payments tables or with the United Nations national income accounting system. Many of the other points in question are on a very detailed level—such things as the treatment of locally recruited staff of embassies, staff of international organizations, production activity on ships, gold transactions and export of gold ore, international defense transactions, and pension funds. These are all problems to those dealing with them, but do not significantly affect the overall design of the accounts and, hence, need not be discussed further here.

In chapter V it was pointed out that the surplus item in the foreign trade and payments current account could be deconsolidated to show changes in assets and liabilities of the United States with foreign countries and foreign countries with the United States. This information is now shown in various places; in the table showing transactions with the rest of the world in the national-income statistics, in the rest-of-the-world account in the flow-of-funds statement, and in the financial data in the balance-of-payments tables.

Finally, it should further be pointed out that the same classification that is used for changes in assets and liabilities of the foreign sector (table A–13 of appendix A) can also be used for showing the level of assets and liabilities, thus giving the balance sheet for the foreign sector.

4. TREATMENT OF CAPITAL EXPENDITURES [48]

(a) *Scope of inquiry*

The development of economic analysis over the last two decades has been characterized by increasing emphasis on the role of capital expenditures and their financing in the course of national income, flows of funds, and the financial situation. In view of this crucial role of capital expenditures, it is particularly important to have reliable estimates of capital expenditures and their financing in the national income and product accounts and to develop estimates of the stock of capital.

The committee has not undertaken to review the estimates in one important sector, inventories, because a task group organized by the Federal Reserve Board less than 2 years ago has surveyed the field thoroughly and has made detailed recommendations.[49] In another very important field, residential construction, the committee has received detailed suggestions from the agency responsible for the statistics, which include plans for verifying the reliability of the statistics now available in detail going well beyond anything the committee itself could have done. The committee, however, has studied the problems in other areas of capital expenditures sufficiently, with the help of the documents and conferences with the agencies participating in producing the statistics, to have definite views as to where the main gaps lie and as to the directions which further statistical work in the field should take.

(b) *Sectoral investment accounts*

Virtually all users of the National Income Division's figures agree that the provision of accounts showing changes in the different assets and liabilities of the sector ranks high among the desired improvements. The Division itself acknowledges this, and is now considering ways to fill the gap. If the committee's recommendations regarding finer sectoring, particularly the subdivision of the present personal account, and the separation of Government enterprises within the business sector are accepted, accounts showing changes in assets and liabilities will also have to be provided for each of them.

The main obstacle to immediate implementation of these obvious suggestions is the difficulty of obtaining the necessary data. This

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[48] Although the report retains for readers' convenience the customary term "capital expenditures," the committee wants to emphasize at the beginning of this discussion that it is using the term in the narrow sense of expenditures on durable, reproducible, tangible assets. Retention of the term does not imply that only expenditures on durable assets have the effect of increasing productivity and output in the future. Several other categories of private or public expenditures, particularly those on education, health, research, and possibly even advertising, have similar effects. Because of the difficulty of segregating those expenditures in the other categories that have output-increasing effects, it is as yet impossible to include them in a broader concept of capital expenditures. The criterion, therefore, has been whether an expenditure increases the stock of tangible, reproducible, durable assets. Use of this criterion has the advantage of being in accord with business-accounting practice and of providing a direct connection between capital expenditures and reproducible national wealth, the latter being equal to cumulated net capital expenditures (after deduction of capital-consumption allowances). It also permits us to use the handy term "capitalization" for the process of treating an expenditure as creating a depreciable asset in the accounts, in distinction from "expensing," i. e., charging an expenditure in full to the current account of the period during which it is made. Readers who prefer a more rigorous terminology may throughout this discussion substitute "expenditures on durables" for "capital expenditures," or for the term "investment," which is sometimes used in the same sense, e. g., in the National Income Division's publications, but is only rarely used in this report because of the danger of confounding it with investment in the financial sense of acquiring an asset of any type.

[49] Reports of Federal Reserve Consultant Committee on Economic Statistics, hearings before the Subcommittee on Economic Statistics of the Joint Committee on the Economic Report. 84th Cong., 1st sess. (1955), pp. 8 ff. and 395 ff.

difficulty, in turn, results from the fact that estimates of capital expenditures are generally derived from data on expenditures for different types of structures and equipment based on output or sales of equipment manufacturers or on construction contracts, none of which provides information on the sector which is making the expenditures. The data from which capital expenditure estimates by sectors could be directly derived are usually not available, or they become available only relatively late after the event.

If sector changes in asset and liability accounts are to be developed as soon as possible, it will be advisable to proceed in two directions. First, energetic attempts must be made to obtain a breakdown of the statistics of the value of output, shipments, or sales of producer and consumer durables and of construction statistics, by sector and industry, of ultimate buyer. The committee regrets that funds requested to improve the manufacturers' sales data by providing such breakdowns, as well as more accurate data, have for 2 years been disapproved by the Congress. It hopes that such improvement will be authorized in the near future. Secondly, data must be collected, possibly with the help of sampling, which cover more sectors, which are available more promptly and which subdivide capital expenditures more adequately than has been possible hitherto. The schedule by which this information is collected can probably also be used to obtain data on capital-consumption allowances, net borrowing, issuance of securities, and acquisition or sale of existing tangible assets, all of which are needed for the establishment of complete sector accounts showing changes in assets and liabilities.

(*a*) *The scope of capital expenditures.*

Two of the complex theoretical and conceptual problems connected with the measurement of capital expenditures in the national income and product accounts are important enough at least to be brought to readers' attention, in order to permit an evaluation of the recommendations the committee is making in this field, even though they cannot be adequately discussed in this report. They are, first, the difference between gross and net capital expenditures and secondly, the scope and method of capital consumption allowances. The first of these problems is important not only in determining the volume of net investment, but also, as will appear in chapter XIV, in measuring the stock of reproducible durable assets as part of national wealth. The second problems has substantial influence not only on the values at which net, in contrast to gross, capital expenditures and saving are entered in the national accounts, but also on the calculation of business profits, since capital consumption allowances must be deducted from receipts before profits are determined.

In the matter of defining the scope of expenditures that are regarded as capitalizable and hence later are subject to depreciation, the committee generally accepts the present practices of the National Income Division. The committee, specifically, sees no reason for recommending changes in the present convention of—

(*a*) regarding all expenditures on currently produced commodities with an assumed regular life of more than 3 years as capitalizable;

(*b*) classifying expenditures on repair and maintenance as current, but including expenditures for major alterations and additions to existing durables with capital expenditures;

(*c*) treating transfer costs on existing durable (as well as intangible) assets, such as real estate dealers' commissions, as current expenses;

(*d*) disregarding altogether both discovery and depletion of natural resources;

(*e*) excluding from capital expenditures all outlays on the creation of intangible assets, such as expenditures for research and advertising; and

(*f*) not including expenditures on what may be called human capital, particularly expenditures on health and education, in national capital formation.

All these types of expenditures have been the subject of extensive discussion and the arguments for inclusion of some of those now excluded in a broader concept of capital formation have considerable merit. In the present state of information and so long as the national accounts are basically molded along the lines of business accounting, the present treatment appears on the whole preferable, provided no claim is made, or implied, that the category "Capital expenditures" includes all expenditures relevant, or contributing, to economic growth.

However, in line with its general principle of providing the basic information for as many useful alternative approaches as possible, the committee would like to see expenditures on these disputed items shown separately, wherever that is feasible, though of course still as a part of current expenditures, so as to permit the derivation of estimates of national capital expenditures on a broader concept by users who prefer it. The committee recognizes that some of these alternatives present such conceptual and statistical difficulties that the National Income Division should not be asked to add these estimates to its already overcrowded schedule, but economic research organizations should be encouraged to do the basic work necessary before the estimates can be put on a regular and more routinized basis, including the development of estimates back to 1929. Some of the topics involved would, it seems to the committee, be well suited for sessions of the Conference on Research in Income and Wealth.

5. THE TREATMENT OF CAPITAL CONSUMPTION ALLOWANCES

The second problem, the treatment of capital consumption allowances—which is of importance for the measurement of net national product and still more so for that of net capital expenditures, saving and net business profits—involves two quite distinct questions. The first is the decision whether to use capital consumption allowances as reported in the books of accounts or tax returns of the different sectors where they are available, i. e., chiefly for corporations and to some extent for unincorporated business. The second question arises for all sectors if it is decided that reported capital consumption allowances do not fit into a system of national accounts, but is posed in any case for the numerous sectors for which no reported capital consumption

allowances are available, i. e., at the present time households, nonprofit organizations and governments.

The present practice of the National Income Division is to accept capital consumption allowances reported in corporate tax returns (or figures extrapolated from them) except for depletion allowances which are added back to profits; to step these figures up to take account roughly of the capital consumption allowances of unincorporated nonfarm business enterprises; to use the capital consumption allowances in agriculture as estimated on the basis of replacement cost by the Department of Agriculture; and finally to add an estimate for the capital consumption allowances on residential structures not owned by corporations based on a 50-year straight-line amortization of construction expenditures.

This practice means, first, absence of uniformity since most business capital consumption allowances, as well as those on residential structures, are based on original cost, while replacement cost is used in agriculture; and since most but not all businesses calculate capital consumption allowances on the straight-line rather than the declining-balance or other methods. It means, secondly, that all changes in the tax laws and regulations regarding depreciation are reflected in the national accounts; for instance, the accelerated-depreciation provisions of recent years, although these provisions may not reflect actual capital consumption. It means, thirdly, that most capital consumption allowances that appear in the accounts of one year are not comparable to the capital expenditures of the same year since they reflect the price level of an earlier period, sometimes as much as 50 years ago, when the expenditures were made. It means, fourthly, that no capital consumption allowances at all are calculated on the stock of durable consumer goods or on the structures or equipment owned by governments.

Even if it were decided to abandon the present method and to derive all capital consumption allowances in the national accounts on a systematic and uniform basis, at least four questions would remain to be decided. They are the sources of the capital expenditure data on which capital consumption allowances are to be based; the length of life and the proportion of scrap value to original cost to be used in setting depreciation rates; the method of depreciation which is to be applied; and the question whether to use original cost or replacement cost or another basis of calculation of capital consumption allowances. Most of these questions have been so thoroughly discussed among accountants, economists, and businessmen that there is no point in going here again over the arguments. All the committee needs to do is to indicate the stand it is taking on the different controversial points and to translate its decisions into recommendations that can be implemented within a reasonable time and can be fitted into a system of national accounts.

Of these questions, the first—the capital expenditures on which the calculations of depreciation allowances are to be based—is conceptually the easiest but statistically probably the most difficult one to implement. The degree of difficulty, however, depends to some extent on the depreciation method used. Under the standard straight-line method the figures required are the expenditures by the different sectors on as many types of durable assets as are distinguished, and these

data are needed for as many years before the year to which the calculation applies as correspond to the assumed life of the asset. Since the capital expenditure figures of the National Income Division go back, at least for private sectors, to 1929, there is no particular difficulty in calculating depreciation allowances for 1957 and later years for all types of assets for which the length of life is set at 28 years or less. For longer lived assets, or if depreciation allowances are to be calculated for years before 1957, it would, however, become necessary to use other unofficial estimates of capital expenditures, or to derive such estimates afresh. This is a considerable task, particularly since the figures have not always been prepared or are not available separately for each sector. Calculation of capital consumption allowances for the Government presents the additional difficulty that in the past no distinction has been made in the National Income Division's accounts between current and capital expenditures, so that in this case the entire set of capital expenditures would have to be developed from the beginning.

The length of life and the proportion of scrappage value to original cost which are necessary to determine depreciation allowances both under the straight-line and the declining-balance method are far from uniform for the same type of asset as among different businesses, although regulation F of the Treasury Department has been used as a guide in many cases. Astonishingly enough, no thorough investigation has ever been made of the actual length of life, time of scrappage, or ratio of scrap value to original cost for different types of durables except for a few regulated industries. Such a study, however, will be a prerequisite for any satisfactory calculation of depreciation allowances in the national accounts. Beyond that, such a study would make a substantial contribution to our understanding of the problem of investment and economic growth.

Of the two main methods of distributing the original cost of an asset over its total useful life the straight line method has the advantage of simplicity involving equal amounts of depreciation in each year of the asset's life, and of still being the predominant practice in business. On the other hand, arguments have been advanced that the declining balance method (in which a year's depreciation is equal to a fixed percentage of the depreciated value at the beginning of the year and hence varies in amount from year to year) conforms better to an economically significant interpretation of the decline in the value of a durable capital asset over its life.

The committee does not feel that a decision must be made at this time on the method which—not limiting the choice to straight line and declining balance methods—should ultimately be used in calculating capital consumption allowances for our national accounts. The final decision in this matter may wait until more relevant data on the increase in operating cost of durable goods with age and on the decline of their value in the second-hand market are available.

There remains the most contentious problem, that of original cost versus replacement cost, the latter interpreted as original cost adjusted for price change between the time the capital expenditures are made and the period for which the depreciation allowance is calculated. It is but a reflection of the status of the discussion among economists and accountants that the committee was unable to formulate a recom-

mendation on this problem that was acceptable to all, or even to most members.

The evident disagreement in this area results in part from the fact that the national accounts are used for various purposes, and the appropriate treatment of depreciation may vary depending on the purposes which are emphasized. If we are interested primarily in an estimate of the total net national product or of net capital formation, the deduction for depreciation should correspond as closely as possible to expenditures that would be needed to maintain the capital stock intact, i. e. be on the replacement cost basis.[50] The problem appears in a somewhat different light when the national economic accounts are used to depict the comparative position of different economic groups. The relative position of recipients of profits and other incomes would be distorted if depreciation allowances are currently calculated were increased to a replacement cost basis without at the same time revaluing capital assets and assigning the resulting capital gains or losses to the owners.

All members of the committee agree that, since each of the two alternative bases of depreciation allowances is useful for some purposes of economic analysis, the users of the national economic accounts should be furnished depreciation estimates on the basis of both orginal and replacement cost; that such estimates should be prepared by the National Income Division, on an annual and quarterly basis; and that the estimates should include depreciation not only for the types of reproducible assets for which it is now shown (privately owned structures and producer durables), but, in agreement with the recommendations made in chapter VII, sections 1 and 2 also for publicly owned reproducible durable assets and for the main types of consumer durables.

The majority of the committee would like to see depreciation allowances shown for each type of asset in the following form which permits users to shift from replacement to original cost basis if they so prefer:

Total depreciation allowances ((*a*) plus (*b*))

(*a*) Book or original cost basis

(*b*) Depreciation revaluation adjustment (adjustment for capital gain (+), or loss (−) on valuation of depreciation)

The committee believes that these estimates of replacement cost depreciation should be supplemented by data on the capital stock against which the depreciation is charged, also revalued to replacement cost. As is done throughout the national product account, estimates in constant as well as current dollars would be needed for all three of the measures involved—gross capital expenditures, capital consumption, and capital stock. With such data progress in the accumulation of real capital could be distinguished from realized and unrealized gains or losses and the change in position of various groups of holders of such assets could be evaluated. Accordingly, the committee recommends that estimates of capital stock and of unrealized capital gains to the holders of that stock should be developed as rapidly as possible and incorporated in the national accounts as soon as they become available.

[50] Whether or not depreciation is based on original or replacement cost it should neither underestimate the actual replacement need nor include as depreciation outlays that actually add to existing assets.

The committee's recommendations in the matter of capital consumption allowances may then be summarized as follows:

(1) Provide estimates of capital consumption at constant and replacement values for those assets for which depreciation is already carried in the national accounts, i. e., business structures and equipment and owner-occupied homes, and develop corresponding estimates of capital stocks in current and constant dollars.

(2) Develop as soon as feasible estimates of depreciation allowances and capital stock, both on original and replacement cost basis, for assets for which such estimates are not now included in the national accounts, i. e., for Government structures and equipment and for major consumer durables.

These two recommendations should not be regarded as a judgment by the committee on the use of replacement cost depreciation in business accounting, in taxation, or in regulatory practice. The committee feels that it is not its function to deal with these fields in which different tests may apply, and that the decision with respect to the treament of depreciation in the national economic accounts should not constitute the basis for any position on the treatment of depreciation in such other areas.

(3) Initiate studies of actual length of life, scrap value, and loss-of-value curves for different types of durable assets and of their significance for economic analysis and the national economic accounts. These studies may well be handled by an independent research organization rather than by a governmental agency, and might utilize the material now being collected in connection with an inquiry by the Internal Revenue Service into the useful lives of depreciable property,[62] which is to be used in preparing a new edition of bulletin F, last revised in 1942.

(4) Develop, after the results of (3) are available and probably in connection with building up capital stock figures, consistent estimates for capital consumption allowances of corporate and unincorporated business, to be used instead of the allowances reported in tax returns underlying the present depreciation estimates in the national accounts.

(5) Develop estimates of unrealized valuation changes of the stock of durables. These estimates will have to be tied to national balance sheets (see ch. XIV and tables A–13 and 14).

6. TREATMENT OF FINANCIAL INTERMEDIARIES

The treatment of financial intermediaries poses a special problem in national income accounting, since the bulk of the revenue of these institutions takes the form of interest and dividend receipts, rather than sales receipts. In the usual procedure for deriving income originating in an industry, interest and dividends received by the industry are deducted from interest and dividends paid, and the resulting figure for net interest and dividend payments is added to the sum of other factor incomes originating in the industry to obtain total income originating. If this procedure were followed in the case of financial intermediaries, however, net interest payments would be negative, and might be so large as to yield a negative entry for total income originating in the industry, a result clearly contrary to commonsense.

[62] See Internal Revenue Service release 182, February 18, 1957.

To avoid this outcome, the National Income Division departs from the usual procedure in deriving income originating in financial intermediaries. The departures are basically of two types. In the case of commercial banks and investment trusts, an entry is made on the debit side of the accounts for imputed interest paid depositors, equal in amount to the excess of property income received over interest paid, and a corresponding amount, assumed to represent the value of services rendered to depositors without explicit charge, is entered on the credit side. The effect of these adjustments is to cancel out the original excess of interest receipts over payments, yielding a figure for income originating in banking equal to wages plus profits. In the second procedure, followed in the case of life insurance companies and mutual financial intermediaries other than life insurance, the enterprise is, in effect, treated as an association of individuals. Its expenditures for labor and other cost purchases and its saving are treated as though made directly by individuals, while items such as death-benefit claims and premiums are excluded from the income and product flows, since such transactions are viewed as interpersonal transfers.

These procedures have been criticized from time to time and sometimes violently. In the case of the banking procedure, for example, it has been pointed out that banks render services to borrowers as well as depositors, and the present procedure fails to recognize this. Thus, it is argued, the present treatment gives an unrealistic picture of the nature of banking operations. The conception of life insurance companies as associations of individuals has been similarly criticized.

While the unsatisfactory nature of the present procedure is generally recognized—by the National Income Division as well as others—little progress has been made toward general acceptance of any of the alternatives thus far advanced. In the committee's judgment, therefore, it would be premature to recommend a change in the present procedure. What is needed is a thorough review both within and outside the Government of the treatment of financial intermediaries in the national accounts with a view to developing an alternative, and if possible simpler, procedure that would conform more closely to the realities of the activities of these enterprises. Such a review, together with one for the closely allied area of nonprofit institutions, might go far toward clarifying and strengthening the estimates for these areas.

Chapter VIII. Short-Term Estimates

In considering short-term estimates—quarterly or monthly—the emphasis shifts almost exclusively to their usefulness in analyzing current developments. The preponderance of attention given those short-term estimates by economic analysts throughout the country, particularly those in business concerns and labor organizations, is directed toward this objective. Changes in various components of gross product and national income are closely followed as a means of understanding what is happening in the economy and of gaining insight into what the future course of developments may be.

Their usefulness in this context is in strong contrast to the very limited contributions they make toward the solution of longer term problems. Quarterly or monthly fluctuations tend to be of little significance for many kinds of basic analysis; for example, those relating

to changes in the structure of the economy or the comparative status of various economic groups.

The use of the short-term estimates and their inherent limitations necessitate the application of different criteria from those relevant for the annual data. The fact that the same conceptual framework may be applied for both purposes testifies to the fundamental validity of the measures appearing in the national accounts. But it involves compromises in the actual process of measurement, because the standards applicable to the collection of annual data cannot be applied in compiling data suitable for keeping up with changes through short periods within the year. The compromises are forced first, by considerations of cost and, second, by the basic conflict between speed and accuracy.

As an unavoidable consequence of this situation, the short-term analyst must necessarily work with data that are partial or, compared to annual figures, substandard to some degree. All he can ask for is the best possible compromise between timeliness and accuracy. He wants the initial indications of change at the earliest possible moment; but he wants even more to avoid the gross errors that arise from jumping too quickly to a conclusion. His initial view of the situation is always provisional and subject to revision as additional information becomes available.

The committee recognizes that there is no complete solution for this problem. It attempts no more than to specify where reasonable lines of compromise might be drawn for the national accounts data and to indicate where some improvements can be made in the published data and in the underlying source materials that go into their makeup.

The guiding criterion for the short-term estimates is that they should provide: First, a timely survey of important changes in the entire economy; second, sufficient detail to define significant sources of change and to permit analysis of related components of the overall flows; and third, a degree of accuracy and stability that would rule out most of the possibility of misleading indications in the first reports.

1. TIMING

One frequent proposal aimed at greater timeliness calls for putting the gross national product estimates on a monthly basis. The committee recognizes the merit of the contention that quarterly data are comparatively slow and may fail to report a turn for more than 6 months. However, careful consideration leads the committee to conclude that development of monthly estimates of gross national product would not be warranted.

The gross national product is a composite made up of diverse elements that differ widely in behavior and other characteristics. Some of these, like Government services, are quite stable, so that specific monthly data contribute little to knowledge of the situation. Others, like inventories, are highly variable, and as a result of large, erratic fluctuations, the change in any month may be difficult to interpret. Month-to-month changes in the composite would generally be determined by the volatile elements and would at times depict erratic fluctuations of little or no significance. Variation of this character is

inappropriate in a broad measure of activity whose primary objective is to portray the movements of the entire economy.

This in no sense implies that the short-term analyst should wait for the gross national product to obtain his earliest information on current changes. Rather, it suggests that the latest national accounts data should provide a solid point of departure from which the analysis might proceed in terms of supplementary information. Prior data are available for most of the components of gross national product, in such monthly statistics as: industrial production; construction; employment; retail sales; manufacturers' sales, orders, and inventories; and merchandise exports and imports. The personal income series is a basic component of the national accounts already available on a monthly basis. A number of weekly series also serves as timely indicators of current developments. Among these may be mentioned department store sales, wholesale prices, business loans, freight car loadings, and a number of production series, including electric power, steel automobiles, coal, petroleum, and paper products. It is clear from this listing that the short-term analyst is not without recourse in the absence of a monthly gross national product series. However, the committee wishes to make clear that it is desirable to compile as many of these supplementary series as possible on a monthly basis, and on an even more frequent basis where weekly or other interim statistics of that kind would be significant.

The role of the gross national product data must be judged in relation to the supplementary statistics available. A gross national product estimate may be regarded as providing a basic summary of economic activity on a quarterly basis, which is capable of tentative extrapolation by means of other available data. Where this procedure is followed, the gross national product need not be affected by the deficiencies of the monthly data as it smooths irregular fluctuations within the quarter. Any areas of uncertainty in the monthly extrapolation based on supplementary series are then directly tied to the specific items in which they appear. The committee therefore concludes that the gross national product serves best as a quarterly statistic and would be incapable, if provided on a monthly basis, of meeting the objective toward which such proposals are directed.

The one item in the national accounts whose delay tends most to frustrate current analysis is corporate profits. The short-term analyst is put in the position each quarter of distributing an unspecified residual between corporate profits and the statistical discrepancy. Since corporate profits are the most variable item on the income side of the accounts, this imposes a serious burden on the user, who is generally in no position to carry it.

The committee therefore recommends that preliminary estimates of corporate profits be developed and if possible included in the initial quarterly reports. If this is not possible, they should be made available the following month, or as soon as feasible after the initial report for each quarter.

More timely preliminary estimates of corporate profits could be obtained by a combination of methods. In the first place, the tabulations of presently available data by the Federal Trade Commission-Securities Exchange Commission financial reports program could be speeded up with some additional effort and some increase in cost, as,

for example, by obtaining telephone reports. At least one month could be gained by this procedure. Additional reporting samples should be initiated for specific areas of nonmanufacturing where we now have almost no current financial information. And finally, tentative estimating procedures should be developed in some areas, by the Office of Business Economics to supplement survey reports by utilizing related data, such as sales and prices, data which provide in large part the basis for the present estimates of proprietors' income.

2. ACCURACY

Most of the data going into the national accounts have to be drawn from existing records, which were brought into being by operating needs of the organizations preparing them or by legal requirements unrelated to their subsequent uses as economic statistics. Where new records are created, as in field surveys of households that do not maintain records, frequent collection of data is very costly and therefore usually has to be restricted to comparatively small samples. Even where comprehensive records are made in the ordinary course of business operations, the results do not become available for some time after the end of the period to which they apply. Some concerns from which reports are desired complete their records quickly, others in a more leisurely manner. If collection is limited to the former, the possibility of bias cannot be eliminated; and if the latter are included, the setting of an early reporting schedule tends to limit cooperation.

As a consequence, strict sampling procedures cannot be insisted upon, but cutoffs have to be established in accordance with processing and publication requirements. If primary attention is given to the month-to-month or quarterly changes indicated by the respondents reporting in time, acceptable preliminary estimates can usually be obtained by matching reports and analyzing the partial and complete samples obtained from period to period.

From the standpoint of the short-term analyst, it is the change from period to period that is most important. Probability samples that give the best estimates of the total are not designed necessarily to give the best estimates of the change. The sampling error may be small in relation to the total but large in relation to the change. It introduces a disconcerting element of erratic variation into the changes portrayed. It is doubtful, for instance, that the reliability of the estimates of changes in retail sales data has been improved by the more scientific sampling procedures adopted in recent years.

We, therefore, suggest that, except in the case of benchmark data, the agencies compiling statistics that enter into the national accounts direct their efforts primarily to minimizing errors in the changes, and where necessary recast methods of compilation with a view to meeting this criterion as fully as possible. This applies to annual as well as quarterly or monthly estimates, depending upon the specific purposes of the data and the conditions under which they are compiled.

It is unrealistic to expect that the quality of all the current items included in the national accounts can be brought to, or even close to, statistical perfection in the near future. Some components will undoubtedly fall short of meeting the standards of statistical accuracy that would make them suitable for publication. We feel, however,

that in most cases the details behind the current estimates should be made available to interested research workers for examination, discussion of problems involved in their preparation, and such use of them as may be justified. Subjecting them to scrutiny and testing by outside specialists in this way is likely to be a most effective means of achieving improvements over a period of time.

Although the committee advocates a bold approach to the problem of providing preliminary estimates, it does not concur in suggestions that would give a spurious impression of accuracy in those estimates. Two proposals bearing on this point were put before the committee: The first is to eliminate the statistical discrepancy from the accounts; the second is to hold revisions to the minimum. Whatever merit these suggestions may have for the annual data (see ch. XI, sec. 1), we feel that they are inappropriate to the current estimates. Under conditions of current reporting, discrepancies and revisions are unavoidable aspects of the process of overall data compilation. We feel that it is better to make this clear to all concerned than to leave users with a sense of security not justified by the facts.

3. DESIRABLE DETAIL IN THE QUARTERLY ESTIMATES

Users of the national income and product data almost universally agree that more detail in the quarterly estimates would be desirable for analytical purposes. The National Income Division has been publishing detail on consumer expenditures in the statistical pages of the Survey of Current Business, to supplement the three-way break by durability (nondurable, semidurable, durable) shown in the quarterly gross national product estimates. A similar degree of disaggregation would be desirable for the other segments of gross national product, and for convenience all should be brought together in a single table.

A suggested listing of items to be shown on the expenditure side of the account in accordance with this proposal is provided in table B–1 of appendix B, which does not constitute a recommendation by the committee as to every detail. The primary breakdown not now regularly available and most widely desired is that for producers' durable equipment. The analysts consulted almost universally propose some breakdown of this item—some suggesting detail by type of equipment, others by user. An illustrative listing is included in table B–1, which is presented merely as a useful compromise based on a primary break by type. Since the nature of the major kinds of equipment largely determines their use, a large part of what is desired in the break by user would be indicated in these data. The "all other" category is somewhat of a conglomerate, but most industrial equipment as such is excluded, appearing in the other categories. We recognize, of course, that new source material will have to be developed in order to provide any such breakdown of the producers' durable goods total.

Nonresidential construction as presently shown is also too inclusive. If it were to be divided in such a way as to separate out the portion intended for industrial use, the additional information would be of considerable analytical value.

Government capital expenditures should also be shown separately, on a basis as nearly comparable with those in the private sectors as

possible. The breakdown shown in table B–1, which is intended to be illustrative only, makes such a separation and also subdivides the remaining expenditures between compensation of employees and other purchases from business.

In the case of the foreign sector, a basic change is recommended which is in accord with that suggested for annual estimates in chapter VII, section 4. The net balance on current account is substituted for net foreign investment, and the major components are shown. The most important aspects of this change are that it reveals the gross flows of goods and services into and out of the economy, and directs attention to what is, for nonmilitary items at least, the more relevant point of analysis. This change has been under discussion for some time and has already been accepted in principle by the National Income Division.

It is suggested that data on the income side of the accounts be presented separately, as illustrated in table B–2. This rearrangement makes for more logical treatment of the data in current analysis than the present arrangement, in which gross national product appears between "national income" and "disposition of personal income." The amount of detail proposed is not greatly increased.

The detailed breakdown of personal income is shown in preference to that for national income. The latter is of less significance for current analysis, except for the data on corporate sources and uses of funds, which are covered in the proposed table B–3.

The breakdowns in table B–3, both as to sectors and as to items shown for each, are again primarily illustrative. Some of the quarterly data in the section on sources and uses of corporate funds are not now published. This is not a complete statement of sources and uses of funds, since certain working capital items are left out of account.

International transfer payments are shown in table B–3 in both the personal and the Government sectors. These items would be removed from personal and Government purchases with the shift from net foreign investment to the net foreign balance on current account and therefore should be separately shown at some other point in the quarterly tables.

4. NEED FOR NEW CURRENT DATA

Most consistent among the demands for new current data are those relating to deflated gross national product. Since the interim movements of the constant-dollar measures diverge at times from the current-dollar estimates, the purposes for which they are constructed can be served only by making them currently available. Most of the price indexes used in deflating the current-dollar estimates are available on an interim basis, so that deflation of the quarterly estimates would appear to be feasible. The fact that estimates of this kind are sometimes computed and published by commercial periodicals and congressional committees reinforces this conclusion. These demands envisage not only the deflated gross product total but also substantial detail. Most analysts would like at least as much detail as in the quarterly summaries now published. The committee is aware that some of the price series are seriously lacking in quality and that in many cases they also miss the time schedule for publication of the current estimates. This illustrates again the need for a concerted

attack on the problem, involving the coordinated efforts of the various agencies involved, that has been discussed in some detail in chapter VI with respect primarily to annual estimates.

Other requests for new current data were not, in the view of the committee, acceptable. These were either impractical or of a character that made their compilation on a basis more frequent than annually inappropriate.

Even with requests limited to this extent, there may be certain detailed items of information in addition to corporate profits which the National Income Division cannot provide as promptly as the basic quarterly series. For all such items, it is suggested that a dual publication schedule might be devised to achieve the most timely presentation of results consistent with minimum standards of accuracy. This could be done by reporting the results initially available as soon as possible after the end of the quarter and supplying additional detail after a short time lag of, say, 1 month instead of a full quarter. The additional work and publication costs involved in this proposal would be justified by the widespread and growing use of these data in current analysis throughout the community.

The same line of reasoning leads to the recommendation that as additional data become available which permit revisions these revisions be released as soon as they are made instead of being held, as is the practice now, until the annual estimates are published in July of the following year. At the least, these revisions should be released at the time a new quarterly estimate is given out, in accordance with the usual practice in reporting other current statistics.

The recommended quarterly reports from the National Income Division should be supplemented by the flow-of-funds data now being compiled annually by the Federal Reserve Board. Insofar as possible, the Federal Reserve should plan to make its publication schedule as timely as that of the National Income Division. This suggestion is discussed in chapter XII.

Chapter IX. Problems of Regional Estimates

The committee has confined this chapter to a brief summary of recommendations without a detailed discussion of the estimates now existing or of some of the basic problems that arise in building up national accounts for areas smaller than the entire United States because a fairly exhaustive treatment of these subjects has recently become available in Regional Income (Studies in Income and Wealth, vol. XXI, a collection of the papers presented at the meeting of the Conference on Research in Income and Wealth held in June 1955); and because the National Income Division has just published a detailed description of its revised estimates in Personal Income by States Since 1929.

1. NATIONAL INCOME DIVISION ESTIMATES

Official estimates of State incomes were first published in 1939 and now are available on an annual basis back to 1929.[52] In recent years,

[52] The first systematic unofficial estimates of income by States were prepared by the National Bureau of Economic Research in the early 1920's. (Cf. O. W. Knauth, Distribution of Income by States in 1919, and M. Leven, Income in the Various States: Its Sources and Distribution, 1919, 1920, and 1921.

annual estimates have been regularly published in the August issue of the Survey of Current Business. These estimates have found widespread use. Business firms employ them for market analysis, and State government agencies utilize them in estimating tax revenues and in formulating tax and expenditure policies. Within the Federal Government, they have been used as a basis for allocating Federal grants-in-aid and more generally for research underlying administrative decisions and policy recommendations touching on regional problems. Finally, research workers both within and outside government have used them in analyzing a variety of regional problems, and in studying the spatial characteristics of the economic growth of the Nation.

The revision just completed and published by the National Income Division constitutes a major advance over the previously available estimates and should be of very great value to all users of State income data. The old income-payments concept has been replaced by the personal-income concept now employed in the national accounts, and the estimates have been placed wholly on an income received rather than a mixed basis. Not only has there been conceptual improvement, but the figures themselves have been substantially strengthened by the incorporation of data from a number of new sources and by a thorough reworking of all the component series back to 1929. The estimates for total personal income have been extended to 1927, thus providing a more solid point of departure for trend analysis than was possible when 1929 was the earliest year covered by the series. Of very great usefulness is the expansion of industry detail on the source of wage and salary incomes in each State. The new series also covers more types of income in kind. In addition, for selected years, estimates of disposable income in each State have been published for the first time. Finally, recent studies of interstate differences in price trends have been used to determine the extent to which the trends shown by the current dollar estimates deviate from those shown by constant-dollar figures. The latest revisions, therefore, represent a very substantial addition to our knowledge of the distribution of income among the States and will provide a fruitful source of information for a wide range of studies on regional and State incomes.

Since the latest revisions incorporate most of the statistical refinements that are possible on the basis of data currently available, the committee's recommendations are largely of a longer run nature. Of primary importance is the collection and tabulation of new data needed further to strengthen the components of the personal income estimates. The committee recognizes that demand for substantially more data in this area is great and that eventually a more effective response to it must be made. At the moment, however, it is more important to devote most of the scarce resources available to Federal statistical agencies to the improvement of the national estimates. However, the committee believes that a continuing search should be made in State government departments, universities, and other research agencies at the local level for both new data sources and analytical innovations capable of serving eventually to extend more of the national-accounts estimates to a regional and State basis.

2. STRENGTHENING THE PRESENT STATE INCOME ESTIMATES

Notwithstanding the substantial improvements introduced in connection with the recent revisions of the State income estimates, there remain some important weaknesses—particularly in the estimates of nonwage incomes—which could be remedied if additional data were obtained.

(a) Wages and salaries

Although the wage and salary estimates are for the most part firmly based, here and there the underlying information is sparse. Perhaps the most important gap is the lack of information to adjust the wage and salary data from a where-paid to a where-received basis. The tabulations of Federal individual income-tax returns published in Statistics of Income are based on the addresses shown by the taxpayer, but they cannot be used as a basis for allocating wages and salaries by state of residence because they do not cover the earnings of low-income employees who are not required to file returns; moreover, they do not provide any breakdowns by class of worker or by industry. The residence adjustments are based, therefore, on data of a piecemeal variety which permit the conversion of the estimates to a where-received basis for only 14 States and the District of Columbia. To remedy this weakness, consideration should be given to the addition of a question in the decennial censuses to determine whether the wage or salary worker is employed in the same State in which he resides. Tabulations based on the replies to this question would be useful not only for the preparation of State income estimates, but also for analyses that are now being conducted in a number of cities on the problems of metropolitan areas.

The most recent old-age and survivors' insurance figures on the payrolls of small firms by States relate to the first quarter of 1951. Until recently, these figures were used to correct the excellent State data derived from the unemployment insurance records for firms employing fewer than eight persons. Beginning in 1956, however, the coverage of unemployment insurance was extended to firms employing four or more persons, so that the 1951 old-age and survivors' insurance data cannot be used to make the necessary corrections. The committee recommends that a new tabulation of the old-age and survivors' insurance data by States be made for a more recent year and that similar tabulations be prepared periodically, say, once every 3 years, in order to keep the corrections up to date.

Aside from these two major improvements, the committee recommends a number of steps to improve some of the industry detail in the wage and salary estimates by States:

(1) The Office of Education should expand its questionnaire on employment and payrolls of private educational institutions. Since this is an area in which it has expert knowledge, it would be desirable that the Office of Education act not only as a collection agency but also prepare the estimates that are incorporated in the official State income series.

(2) Considerable work needs to be done to improve the reliability of the State allocations of military payrolls and other disbursements. Consideration should be given by the military services to the sampling of both individual and payroll records and of the records of depend-

ency allotments in order to provide the necessary information. At a minimum, an effort should be made by the military services to break down their payroll data as between persons in continental United States and those employed overseas.

(3) Improved estimates of the State distribution of wages and salaries paid by the railroad industry could be made if the Railroad Retirement Board were to require the reporting of payrolls by State of residence. If this information were available on the records submitted to the Board, it would be relatively easy to tabulate the wages and salaries paid by the small number of class I railroads in a manner that would be usable directly for the State income estimates.

(4) The sample of the census surveys of State and local government employment and payrolls should be enlarged and consideration should be given to taking them once every 3 or 6 months, instead of only once a year. (For a discussion of this and other recommendations for improving the data for State and local governments, see ch. XI, sec. e.)

(5) The State tabulations of income data collected in the decennial censuses should be cross classified by type of income (wages and salaries, self-employment income, and other income), by class of worker (public or private employees, or self-employed) and by industry.

(b) Nonwage incomes

The primary source on the distribution of property and nonfarm proprietors' incomes by States are the tabulations of Federal individual income-tax returns. However, in recent years, these tabulations have contained distributions only of wages and salaries, dividends, and interest by States. For other items the latest distributions available are 15 years old. It is likely that the present sample can provide sufficiently reliable State totals for rents and royalties and nonfarm entrepreneurial incomes. In any case, the information should be tabulated for the benefit of the National Income Division and only the figures that have a sufficiently small sampling error should be released to the public. In preparing such tabulations, the Internal Revenue Service should separate farm from nonfarm entrepreneurial incomes, since the combined totals are of practically no value either for estimating purposes or for analyses of State income differentials.

With respect to farm income, the major problem is that there is now very little basis for estimating the production expenses that must be deducted from gross farm incomes to arrive at the net figures by States. It may not be necessary to obtain such data every year for each State. However the Department of Agriculture should devise sample surveys to provide the necessary information at least at less frequent intervals.

In the case of nonfarm business incomes, the information on self-employment incomes reported to the Social Security Administration could be utilized more effectively if benchmark tabulations comparing total self-employment income with taxable self-employment income were prepared. Such tabulations, combined with the type of income breakdown of the State data in the decennial census recommended above, would ultimately permit the estimation of nonfarm business incomes in the various States by industry.

(c) *Price data*

A recent study by members of the staff of the Bureau of Labor Statistics shows that price trends in the various States have been fairly similar over the past several decades.[53] This suggests that the relative trends among States shown by the current-dollar estimates of personal income are a reasonable approximation to those in constant dollars. As a check of the constancy of this relation, the committee recommends the extension of these price estimates by the Bureau of Labor Statistics on an occasional basis.

(d) *Disposable income*

As noted above, Personal Income by States Since 1929 presents for the first time official estimates of disposable income in each State for selected years: 1929, 1940, 1946, 1950, and 1953. On the whole, these estimates do not result in any significant alteration of the relative income position of the various States that is derived from the estimates of personal income before tax. The committee recommends that these estimates should also be continued on an occasional basis, so that a continuing check on the relationship between State personal and disposable incomes can be maintained.

3. FURTHER EXTENSION OF DATA IN THE NATIONAL ACCOUNTS BY STATES OR OTHER AREAS

A number of possible extensions of the State estimates have been suggested to the committee. At the extreme, it has been recommended that the long-run objective should be to prepare for each region or State a set of social accounts paralleling those for the national economy, including an income and product account, a balance of payments, an input-output matrix, a flow-of-funds statement, and a balance sheet. As we have already indicated, such an approach would be unwise simply because the preparation of estimates for 48 States—or even for half a dozen to a dozen regions—would be prohibitively expensive. Even though the additions to our knowledge of the causes of interregional and interstate differentials might be considerable, it is the committee's view that, at least for the foreseeable future, the emphasis by the Federal statistical agencies should be mainly to expand and improve the accounts for the Nation as a whole.

We would like, however, to encourage further work on regional and State economic problems by State agencies or private research organizations. It is our belief that most progress will be made in this direction if the States themselves undertake to develop more comprehensive accounts, with the cooperation of the universities, private foundations, and the regional Federal Reserve banks. We urge the Federal statistical agencies to cooperate in such undertakings, as they have done in the past. For example, the Census Bureau has on occasion conducted sample income-distribution surveys for particular States on a contract basis.

In the committee's view, this is by far the best procedure. Not only would the direct preparation of more detailed State data be beyond the resources of a Federal agency like the National Income Division, but in many respects it would be less efficient. The local unit

[53] Abner Hurwitz and Clarence D. Stallings, Interregional Differentials in Per Capita Real Income Change, Studies in Income and Wealth, vol. 21, pp. 195–264.

may be able to utilize sources of information that would be overlooked if the operation were centralized in Washington and would be able to enlist the talents of persons who are familiar with local conditions and who can provide expert assistance in the planning of the type of study needed for the particular ~~committees~~ and in the collection of the necessary information. The recent studies of the Chicago Federal Reserve Bank in Milwaukee and Indianapolis are valuable attempts to develop a system of income and product accounts for metropolitan areas. Experiments have also been made with the use of local input-output tables as a means for community surveys by a research group of the National Planning Association.

The following are among the areas that might be explored in this way by local groups. In submitting this list, the committee wishes to emphasize that the items are illustrative only. There are undoubtedly others that are worthy of exploration and these should also be examined when the need arises.

(a) Income estimates for areas smaller than the State

Estimates of income for areas smaller than the State, for example for counties or metropolitan areas, are of use to governmental units in the study of local problems and to business firms in market analysis. In recent years a number of studies of this nature have appeared, particularly estimates of county income in a number of Southern States. The approach followed in developing these estimates is illustrative of that favored by the committee—preparation of the estimates by a local organization with assistance by the statistical agencies of the Federal Government on methods and data. This arrangement seems most conducive to the future development of estimates of this type.

(b) Income originating

The present State income estimates relate to the income received by the residents of a State. For some purposes—for example, in problems of taxable capacity or regional comparisons of productivity—it would be helpful to have estimates of income originating in the State, that is, the income paid out by establishments operating within the boundaries of the State, regardless of whether the income recipients live within or without the State.

The chief obstacle to securing figures on this basis is the difficulty of distributing property income by State of origin. For example, a firm having establishments operating in a number of States may report its profits only on the combined operations of all establishments under its ownership. The same problem is encountered in estimating the distribution of income originating by industry, since a particular firm may own establishments operating in several industries. Elsewhere we have recommended that the problems of estimating profits by industry of origin be explored. It would be desirable to explore at the same time the possibility of extending the allocation to States as well as to industry of origin. For such exploratory work, the method need not be highly refined. What is needed is a rough indication of the extent to which income originating in each State differs from the present estimate of income received, so that the problem may be assessed properly and rough allowances made, if necessary, for the disparity between the two income estimates.

(c) Interstate price differentials

Although a fairly comprehensive investigation has recently been made of interstate differences in price trends, there is still no information on the differences in price levels among the various States. Such a study is needed to determine the extent to which interstate differences in money income reflect real income differences, a consideration of importance in using the estimates for allocating grants-in-aid. Needless to say, a study of this type would require close cooperation with the Bureau of Labor Statistics and the Department of Agriculture.

(d) Gross regional product

It is clear that the development of an estimate for each State of gross product and its components would add an important body of data on the economic structure and development of various areas of the United States. Such estimates would provide a variety of useful information—for example, they would provide comparisons of regional expenditure patterns, distributions of important categories of goods produced by geographic area, and estimates of personal savings in the various States, and would permit an analysis of the geographic impact of changes in demand for particular categories of goods. Although the difficulties of deriving gross product estimates by geographic areas are very great, consideration should be given to the possibility of preparing such estimates. Exploratory studies on several components of the gross national product (for example, producers' durable goods and houses) might be undertaken first and the list could be enlarged after some experience with the practical problems is obtained. Such studies would provide interesting insights irrespective of whether the derivation of the entire gross product proved feasible. It would also provide a firmer basis than now exists for assessing the difficulties and estimating the costs of preparing the complete range of gross product estimates for each State.

(e) Other national accounts

Further work might also be done to extend the input-output tables, the balance of payment statements, the flow-of-funds accounts, and the balance sheet in directions that would improve their adaptation to regional analysis. Although work of this type has progressed much less than that on the income and product accounts, some estimates—generally preliminary and exploratory in nature—have been prepared at several of the Federal Reserve banks. Regional input-output tables are perhaps of greatest potential usefulness, since they would help to improve and check the existing income and product data and would provide a basis for estimating gross and net flows of goods among regions. However, considerable refinement of all three of these relatively new and still evolving techniques of summarizing national economic activity will be required before they can be applied to regional analysis.

Chapter X—Size Distributions of Income

Distributions of personal income by size classes broaden the picture of the economy that is obtained from other data in the national income and product accounts. They are useful for many purposes—as a

description of how widely income is distributed among the Nation's family units; as an indication of the relative welfare of various groups in the community; as an aid in understanding consumer decisions to spend and save; as a basis for the formulation of marketing programs and policies by business; as a guide for governmental policies to improve the earning capacity and living conditions of low-income persons; and as a basis for measuring the relative tax burdens of the various income classes.

Like most statistics in national accounts, size distributions of income are more meaningful when they are available periodically—if not annually—and when they are broken down for significant groups in the population. We know, for example, that in the United States income is now much more equally distributed than it was in the 1920's and much of the strength of our economy in the postwar period has been attributed by some economists to this change in the distribution of income. Whether the distribution of income is changing—and the direction and size of the change—is information which is necessary for the development of both public and private policies. For this reason, the committee believes that size distributions of income should remain an integral part of the national accounts, and that the data underlying these distributions should be improved in order to obtain more reliable estimates.

The only available set of income distribution estimates that is integrated with total personal income as shown in the national accounts is prepared by the National Income Division.[54] The blownup statistics derived from sample field surveys of family income as well as those from individual income-tax returns fall considerably short of these income totals, partly because nonmoney items of income are almost entirely excluded, but to a considerable extent also because of understatement of the various money items. Moreover, the relative amount of income understatement in the primary data varies considerably among types of income and also from one year to another. By adjusting to the annual income totals for separate types of income, and by integrating the field survey data with the basic information from tax returns, the National Income Division provides a size distribution series that is more comparable over time than the survey or tax return data, and that can be interpreted in conjunction with the income totals from the national income and product accounts.

Although considerable progress has been made in recent years in improving the statistical techniques for making estimates of income size distributions, these advances have not—and, indeed, cannot—overcome the gaps in our knowledge about the income of important groups in the population. To fill these gaps, it will be necessary to allocate more resources to obtain information to improve the corrections for understatement of income embodied in the source material and to provide more adequate material for combining the various sets of basic data.

1. INTEGRATION OF FIELD-SURVEY AND TAX-RETURN DATA

Field-survey and tax-return data cannot be directly integrated because of two major problems: First, the reporting unit is different in the two sets of data; and second, the income concept is not identical.

[54] See Income Distribution in the United States by Size, 1944–50, 1953, and Income Distribution in the United States by Size, 1950–53, in Survey of Current Business, March 1955.

The reporting unit in field surveys is the family or unattached individual required for purposes of income size distributions, and the family income that is used as a basis of classification by income size in these surveys covers a wider range of money income items than the tax return statistics. On the other hand, survey data generally suffer from substantial understatement of income due in large part to the faulty recollection by respondents of their incomes. Field surveys are particularly weak for the income ranges at both the lower and the upper ends of the income distribution. Tax return data are, of course, weakest at the lowest end of the income scale, because persons with incomes below the income tax filing requirements do not file returns unless they are eligible for refunds.

In view of the deficiencies in the two sets of data, the cheapest method of obtaining distributions of money income by income classes would be to utilize the best information in each source. To do this correctly, it is necessary to have sufficient information to bridge the two sets of data. Such a bridge can be constructed by multiple cross-classifications of family units in the field surveys by income-size classes, by numbers of earners in the family, and by the types of incomes received by each income recipient in the family. By matching a sample of the income recipients covered in the field surveys with the tax returns they file, it is possible to reclassify the tax return tabulations by size of family income.

This is, in essence, the method now used by the National Income Division, but the latest data for establishing a bridge between field surveys and the corresponding tax return data are for the year 1949. Since the intervening years have produced numerous changes in the economy, it is essential that new and more current cross-classifications be obtained as soon as possible. The committee recommends that, in connection with its annual surveys of income, the Census Bureau should provide these cross-classifications periodically, say, once in every 3 or 5 years. We also recommend that a subsample of the census sample be matched with the corresponding tax returns for these years in order to complete the bridge between the two sets of data.

Unlike the 1949 study, the new matching studies should concentrate more on the upper end of the income scale in order to obtain a larger number of matched income-tax returns in the top income sector than in 1949 when the sample of matched cases was small in the top income ranges. Although consumer units in all income classes should be covered in the sample that is selected for matching, a larger than proportionate number of upper-income census families and unattached individuals should be drawn.

Another important data gap would be filled if tax returns filed by members of farm operator families—the persons reporting farm income and, separately distinguished, other persons in the family—were separately tabulated by income classes as part of the matching study. The National Income Division now attempts to remove the tax returns filed by all these persons before combining the returns into family units, because income size distributions are developed from other data sources in the case of farm operator families. The Internal Revenue Service has provided a special tabulation for persons reporting farm proprietors' income by income classes, but the necessary data for other members of the farm family can be obtained only by a matching study of the type proposed here.

2. CORRECTION FOR UNDERSTATEMENT OF INCOME

The available evidence suggests that, even after reports of field surveys and tax returns are matched and appropriately combined, the resulting distributions fall substantially short of accounting for total personal income received. The missing income consists to a large extent of entrepreneurial and property incomes. Since these income items are not distributed proportionately by income classes, some factual basis is needed for allocating the missing incomes by income levels.

One of the sources of data used for making these allocations has been the audit control studies conducted by the Internal Revenue Service for returns filed in 1948 and 1949. In these studies, a scientific sample of individual income-tax returns was drawn and each return was subject to a full field audit by trained internal revenue agents. Although the studies were used primarily for evaluating administrative techniques of tax enforcement, they also yielded information on underreporting of incomes by taxpayers. As of this time, all of the information on income errors for the 1949 survey has not yet been tabulated. Moreover, a similar study was made for the year 1950, but no income information has been tabulated as yet in a form that would be useful for correcting income size distributions for understatement of incomes.

The committee urges that the information from the 1949 and 1950 audit control studies be tabulated by the Internal Revenue Service as soon as possible to provide estimates of the amounts of each type of income disclosable by audit, by the income classes used in Statistics of Income. These tabulations should be made available to the public—except to the extent that they involve confidential information—in order that non-Government research students be given the opportunity to use them in analytical studies of income size distributions.

Tabulation of the 1949 and 1950 audit control studies will not satisfy the needs for the future, since the understatement of incomes on tax returns among income classes and types of income may not remain the same for a long period of time. Accordingly, it would be desirable to have such surveys at least once in every 5 years as a basis for allocating the missing income. The committee recognizes that these surveys are expensive. Nonetheless, we believe that the purpose for which they would be used is important enough to warrant the expenditure of the necessary funds, particularly since they would provide extremely useful data for administrative purposes as well. With individual income-tax receipts at a level of about $35 billion, the expenditure of funds for locating returns with tax errors and for evaluating the efficiency of auditing techniques cannot be regarded as a luxury. We also suggest that the Internal Revenue Service should design the tabulations in consultation with the National Income Division in order to avoid the loss of key information needed for statistical purposes by inadvertence and also to avoid tabulation of unnecessary information.

3. SPECIAL STUDY FOR TOP INCOME TAX RETURNS

Because the National Income Division's family income distribution series is determined to a large extent by the pattern of income changes over time shown by Federal individual income tax returns, the revised

income size distributions will reflect the decrease that occurred in the number of Federal individual income tax returns reporting high incomes between 1950 and 1953. In view of the general increase in incomes and in particular the almost certain increase in upper bracket salaries in this period, the decrease is puzzling and merits close investigation. One thing the Internal Revenue Service can do immediately to shed light on this question is to prepare for the years 1950–53 size distributions of tax returns, by source, on the basis of the income as reported less net capital gains. Such distributions should also be prepared for subsequent years, since the National Income Division must in any case adjust the data for capital gains. In addition, the committee recommends that a sample of top income tax returns in 1950 or 1951 be selected, and the returns for the same individuals located, insofar as possible, for succeeding years through, say, 1955. Detailed tabulations of all the income and deduction items, including the details of the capital gains, and related schedules reported on their tax returns by this sample in successive years might throw light on some of the reasons for the decrease in the number of returns in high-income brackets and would, in addition, make an important contribution to our understanding of the financial situation and activities of families at the top of the income pyramid.

4. SOURCE PATTERNS OF INCOME FROM THE FIELD SURVEYS OF FAMILY INCOME

To appraise and adjust the income distributions from the sample surveys in the light of available information on totals for the various types of income, tabulations in terms of source patterns of income are needed. These tabulations should show, for families and unattached individuals in each income class, the aggregate amount of each major type of income reported in the blown-up sample survey, and the number of consumer units reporting that type of income. Since relative understatement of income in the surveys differs for the various types of income, and since the relative importance of the various types of income differs among income brackets, source patterns provide a basis for adjusting the survey results in the light of the independently determined totals for the various types of income.

Source patterns should be tabulated separately for farm operator families, nonfarm families, and unattached individuals partly because the three groups differ greatly with respect to the types of income comprising their total income. If the sample permits, the nonfarm group should be subdivided by major occupation of the family head in order to make possible the derivation of adjusted distributions for important subgroups of the population.

5. IMPROVED DATA FOR FARM FAMILIES

Limitations in the income size distributions for farm families (i. e., families operating farms as defined in the census of agriculture) reflect the fact that total net farm income is substantially understated in practically all sample surveys of farm family income, and even more so in income tax returns. Thus we cannot be certain that the basic shape of the family income distribution for farm families, as measured for example by the Lorenz curve, is even approximated by the primary

data. Nor can these data be used to measure changes in the farm income distribution over time because the results have been obtained from successive surveys which differ substantially from one another.

The committee recommends that a major effort be devoted by the Department of Agriculture to experimentation with alternative methods of enumeration until improved results are obtained, i. e., until the estimates from one year to the next are consistent and conform reasonably well with the annual net farm income totals. These surveys should be designed to cover nonmoney income from farming, as well as the usual money income, to fill an important data gap that accounts for a significant fraction of farm family income.

6. DATA ON LOW INCOMES

One of the important uses of income size distributions is to identify the population at substandard levels of living and the causes of low-income status. A considerable amount of information is already available on the characteristics of low-income groups,[55] but our knowledge falls considerably short of what is needed for policy purposes.

In fact, we are not absolutely certain at the present time about the exact number and proportion of the Nation's family units in the lowest end of the income distribution. Estimates based on the two currently available field surveys of income, by the Census Bureau and by the Federal Reserve System (in cooperation with the Survey Research Center of the University of Michigan), vary widely. Part of the difference may be accounted for by differences in the coverage of the two surveys.[56] But even after adjustments for these differences are made, the variations in numbers of family units below the $2,000 income level are still relatively large. The committee suggests that a major effort be made by the agencies conducting the surveys to determine the reasons for the differences in their figures.

Apart from the question of numbers, there is need for obtaining considerably more information about the low-income groups in order to identify them properly. Low incomes may result from lack of education, age, unemployment, illness, widowhood, broken families, discrimination, and other causes. The relative importance of some of these problems is known approximately, but a complete catalog of all of the causes is not available. For the immediate future, identification of the socio-economic characteristics of low-income units is probably one of our most important problems of data collection.

The committee recommends, therefore, that particular emphasis be placed by field surveys in the near future on low-income units. This will require more adequate samples for the low-income classes in order to provide statistically reliable estimates of the numbers of families and unattached individuals in the various socioeconomic groups mentioned above. Special efforts should also be devoted to improving the data for low-income families by means of special probing questions or other devices. Requiring special attention is the extent to which the

[55] See Characteristics of the Low-Income Population and Related Federal Programs, selected materials assembled by the staff of the Subcommittee on Low-Income Families of the Joint Committee on the Economic Report, 84th Cong., 1st sess. (1955). Additional information may be expected from the work of the New York State Interdepartmental Committee on Low Incomes.

[56] Ibid., pp. 40–43.

number of low-income units, particularly unattached individuals, may be overstated in the surveys because the units are enumerated and their family status determined in 1 year whereas the income information obtained pertains to the preceding year in which they may have had entirely different living arrangements, e. g., lived as members of another family unit on whom they were dependent for support. Finally, an effort should be made to obtain income histories covering a period of several years to determine the persistence of low incomes among families over a period of time. The census of 1960 will provide many data on the characteristics of low-income groups. We attach special importance to the satisfactory tabulation of these data since much meaningful information could thus be provided at low cost.

7. EXPENDITURES AND SAVING BY INCOME CLASSES

No agency of the Government is now collecting, or planning to collect, information on the expenditure patterns of the various income classes for the country as a whole.[57] The last countrywide urban study of this kind was made by the Bureau of Labor Statistics for the year 1950, and even these data were not completely tabulated until recently—with funds provided by a private foundation to the University of Pennsylvania. A similar farm survey has just been completed by the Department of Agriculture.

The committee believes that surveys of expenditures and saving by income classes should be a regular part of the statistical programs of the Federal Government. Plans should eventually be made to make such surveys once every 5 years in sufficient detail to provide estimates of the outlays by consumers for the major categories of expenditures (e. g., food, clothing, shelter, consumer durables, etc.). However, before such surveys are made on a regular basis, considerably more experimentation will be needed to refine techniques of data collection in order to reduce nonreporting or underreporting by respondents.

We also call attention to the report of the consultant committee appointed by the Federal Reserve Board on Consumer Survey Statistics, which made specific recommendations for the improvement of the survey of consumer finances conducted by the Michigan Survey Research Center of the University of Michigan for the Federal Reserve Board.[58] The survey of consumer finances provide material for appraising the economic situation of households and for understanding and predicting consumers' behavior. We believe that immediate action should be taken to implement the recommendations of the consultant committee.

8. INCOME HISTORIES

The income of a family unit in one particular year is the result of both permanent and transitory factors. Lengthening of the period

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[57] In its budget for the fiscal year 1958, the Bureau of Labor Statistics requested funds for conducting such surveys in 4 to 6 of the 46 cities in which prices are collected for the Consumer Price Index. At the time this budget was prepared the Bureau indicated its intention to request such funds annually to make surveys in a different group of cities each year. Final congressional action has not been taken on the 1958 request.

[58] Reports of Federal Reserve Consultant Committees on Economic Statistics, hearings before the Subcommittee on Economic Statistics of the Joint Committee on the Economic Report, 84th Cong., 1st sess. (1955), pp. 249–294.

covered will yield size distributions of income that are more representative of income status than annual data. We have already called attention to the need for such information in connection with the analysis of the incidence of low incomes. Information of considerable value could also be obtained for higher income groups by concentrating on income histories of family units for more than 1 year.

To obtain this information, it is necessary to collect income data for the same family units over a period of years. Field surveys cannot easily be used for this purpose because it is difficult to obtain reliable responses from respondents for the distant past. Accordingly, reliance would have to be placed primarily on a sample of identical tax returns filed with the Internal Revenue Service for the necessary information. The committee recommends that the methology and problems that will arise in connection with such a study be studied in a pilot project based on a small sample of tax returns, with the view to establishing a permanent method of collecting information on the income histories of identical taxpayers. Since tax returns will not cover the low-income groups adequately, consideration should also be given to the possibility of using more refined methods of interviewing through field surveys of low-income units to round out the picture of income histories that would be obtained from tax returns.

9. CHANGES IN THE METHODS OF INCOME DISBURSEMENT

As the economy has grown and the tax system has changed, methods of compensation and of withdrawing income from corporations have been greatly altered. The reliance on pensions, deferred compensation and stock options in lieu of cash wages and salaries, the conversion of ordinary incomes into capital gains, the growth in importance of business expense accounts that cover items of personal consumption, and the use of personal trusts to split incomes among members of the family is likely to have had an important impact on the relative size distribution of income. Since the National Income Division relies heavily on the bookkeeping records of business firms and on the tax returns of individuals to estimate the size and distribution of personal income, their estimates do not take into account many of these changes in income disbursements that have occurred in recent years.

Unfortunately, it is difficult to prescribe procedures for remedying this situation, since the required information is not readily available in official sources. It is important, nonetheless, that the developments described above should be carefully examined by competent research workers. The committee suggests that private research organizations and universities would be the most appropriate agencies for conducting such analysis. In order to make these studies possible, the collecting agencies of the Federal Government, particularly the Internal Revenue Service, should provide research workers maximum feasible access to official records. It will be necessary also to have the cooperation of business firms and financial institutions to supplement the data from Federal Government records.

The committee also urges the Conference on Research in Income and Wealth to encourage research in this area and to make available its facilities for an interchange of views by those interested in participating in such research. We also urge the conference to devote at

least one session at one of its annual meetings to a discussion of these difficult and complex but important matters.

10. REGIONAL, STATE, AND COUNTY DISTRIBUTIONS

Requests are frequently made by Government officials, research workers, and businesses for breakdowns of the national income size distributions by region, for particular States, and even for counties. The collection and tabulation of data to such detail requires samples of a size that would be prohibitively expensive and it is doubtful whether the Federal Government should devote its resources, except for the decennial censuses, to the collection of these data. There is no reason, however, why the State governments cannot undertake to make such sample surveys either directly or through competent sampling organizations. The Census Bureau his cooperated on a number of occasions with State governments on a contract basis. This year, for example, it is conducting special income field surveys for New York State and the District of Columbia. The committee hopes that the Bureau will be able to continue to satisfy in the same cooperative spirit similar requests in the future.

11. PLANS FOR THE 1960 CENSUS

It seems likely that, as in the preceding censuses, income information relating to the income year 1959 will be collected in the 1960 census for a large sample of the population.

The committee has been informed that in all probability a household schedule will be used rather than the line schedule which was employed in the 1950 census. This change will have an important bearing on the usefulness of the income data, since it will be feasible to collect information separately for each family member rather than for the family head and for all other family members as a group. The committee strongly recommends that this change be made.

The committee also believes that the next decennial census should be made the occasion for a concerted effort on the part of other Federal agencies to fill many of the statistical gaps in our knowledge about income size distributions. Plans should now be made for: (1) matching studies between census data and tax returns; (2) tabulation by the census of cross-classifications for combining census and tax return data; (3) an audit control survey by the Internal Revenue Service to obtain estimates of underreporting on tax returns; (4) more detailed census questions to obtain better data on the characteristics of the low-income groups; and (5) a supplementary survey designed to obtain estimates of expenditure and saving patterns by income groups and by other significant characteristics of consumers. We would hope that future decennial censuses will continue the collection of such data. With appropriate supplementation by smaller and less ambitious sample surveys in intercensal years, the Nation would then have a continuous body of data on income size distributions which would shed adequate light on numerous important economic and social questions.

12. PUBLICATIONS OF ESTIMATES of size distribution

The National Income Division generally prepares preliminary size distribution estimates for the Nation as a whole within 6 or 8 months

after the end of the year. For example, distributions for calendar year 1955 were published in the June 1956 issue of the Survey of Current Business. At this early date, data from the Survey of Consumer Finances are generally available, but the tabulations based on the Census Bureau surveys are not yet complete, and no data are available from tax returns. Accordingly, the estimates for the top income brackets are little more than extrapolations from the last year for which all of the source material is available, with heavy reliance on the assumption that the shape of the income distribution reflected in the Lorenz curves for the major sectors (e. g., farm families, nonfarm families, wage-earning families) has remained unchanged.

Although it is true that Lorenz curves change very little from year to year, wide variations in the distribution of income by size classes may occur even if the changes in the Lorenz curves are small. In view of the facts that the estimates can be misinterpreted by those who are familiar with the approximate techniques that must be used in preparing current estimates, the committee questions the desirability of publishing size distributions of income before survey and tax-return data are available. We recognize that, for some purposes, rough estimates based on constant Lorenz curves are sufficient. Such extrapolations as are now made should be done informally and quickly—if at all—and the results distributed to persons or organizations in mimeographed form with a warning about the character of the estimates. It would be better to avoid giving widespread circulation to such estimates in order to prevent the inevitable misinterpretations that now occur.

13. INCOME CONCEPT USED IN SIZE DISTRIBUTIONS

At the present time, the income size distributions prepared by the National Income Division are based to a large extent on the personal income concept used in the national income accounts. "Family personal income"—the concept used—is equal to personal income less the income of members of the Armed Forces living on military posts, the income of the population in institutions, and the income of nonprofit organizations. The decision to use the personal income concept as a basis for the income size distribution estimates was made in order to provide a close tie-in with the aggregate personal income data that are now widely used.

The committee recognizes that the use of different income concepts makes for confusion. However, we believe that, in this particular case, there is little virtue in enforcing consistency, particularly when some departures have already been made with respect to the income recipient units included in the size distribution totals. It is doubtful whether, for most uses to which the data are put, the concept used at the present time is applicable. Moreover, use of the present definition of family personal income requires the allocation of imputed interest derived by individuals from commercial banking and the property income earned by life-insurance companies to the various size classes which can be done only on a rather arbitrary basis.

To make the data more meaningful to most users, the committee recommends that the basic concept of income for size distribution purposes should be the sum of: (1) cash incomes earned in production, (2) transfer payments, (3) wages paid in kind, (4) the net rental

value of owner-occupied farm and nonfarm dwelling, and (5) the net value of food and fuel produced and consumed by farm proprietors. This concept would avoid the distortions in the size distributions that would arise if all imputed items were neglected. At the same time, it would limit the imputations to those items that are clearly necessary to put the incomes of farm and nonfarm groups and of home owners and renters on a comparable basis.

It would be desirable also to provide size distributions on the basis of three additional concepts that have important practical and analytical usefulness. The first is a distribution based entirely on a cash income concept; the second a distribution based on the revised family personal income concept as defined above plus realized net capital gains and losses; the third a distribution based on the national income concept. The cash income concept is wanted by those who use the data for marketing purposes. The concept inclusive of capital gains is particularly important to evaluate the effect of profits realized as a result of changes in the value of individual asset holdings during inflation or depression. As indicated in chapter V, when data become available, both realized and unrealized capital gains should be introduced into the system of national accounts. It would be desirable to add at the same time unrealized capital gains to the second of the supplementary size distribution concepts suggested here. The national income concept would show the effect on the size distribution of income of all the imputed items that accrue to the benefit of individuals and of undistributed corporate profits.

14. CONSTANT-DOLLAR ESTIMATES

For some purposes, estimates of income size distributions using incomes in constant dollars are useful because they eliminate the effects of price changes. The committee recognizes that adequate deflators for the different types of families in the economy and for the different income levels are not available. Nonetheless, even approximate estimates based on constant dollar figures would be helpful. We suggest, therefore, that rough constant-dollar estimates be prepared when the official estimates in current dollars are released. Initially, the deflation of incomes for price changes might be made on the basis of the Consumer Price Index for urban and rural nonfarm families and the index of prices paid by farmers for farm families. However, later separate deflators might be developed at least for farm, rural nonfarm, and urban families and, if possible, for unattached individuals and high-income families.

CHAPTER XI. STATISTICAL ADEQUACY OF NATIONAL INCOME AND PRODUCT ESTIMATES

1. GENERAL CONSIDERATIONS

To the extent that national income and product data are utilized for public policy formulation, private decision making, and economic analysis, users of the data have a decided interest in their reliability. This concern is shared by the compilers of the figures—the staff of the National Income Division and other Federal statistical agencies—who exhibit a genuine professional desire to produce the best possible data,

and steadly to improve the adequacy and quality of their estimates. We have already indicated that, from the standpoint of accuracy both with respect to aggregates and much of the detail shown, the data in the national income and product accounts probably surpass those of any other country in the world. Deficiencies that do exist are the result primarily of the inadequacy of the basic data, so that major improvements in reliability will be possible only if the primary data sources are improved.

(a) Measurement of error

In the preparation of the national income and product accounts, use is made of a large volume of statistiacl materials collected by governmental and private agencies for other purposes—information that must be further processed to fill the gaps and to adjust for differences in definition. The final estimates are unavoidably affected by the degree of accuracy of the original data, their adaptability to the national accounting framework, the extent of the coverage as well as the character of the gaps in special-purpose statistics, the regularity with which figures usable for benchmark purposes or for current extrapolations are collected, and the timelags between the dates of collection and publication of the original material. The very nature of the available data thus leaves an imprint on the estimating procedures. No simple mathematical or mechanical procedure can be utilized—the procedure used must depend on the particular item being estimated. The problem is further complicated when subjective adjustments must be made to the original data, or when items that do not represent actual money transactions must be imputed. Reliance must be placed, therefore, on the use of judgment in the development of meaningful and consistent estimates suitable for incorporation in the national income accounting structure and—above all—on the development of checks against independently derived alternative measurements.

Although some measurements in economics may be presented with what may seem to be a great degree of mathematical precision, appearances may be deceptive. One frequently encounters economic data that give the impression of considerable accuracy and exactness, merely because of the form of presentation. This is the case, for example—to the uninitiated at least—with the ordinary balance sheets and cost of production statements. Even if expressed to the last penny, it is likely that only the figures in such statements that reflect the handling or possession of money and some types of claims are accurate. Other types of data, such as those reflecting inventory valuation, amortization, goodwill, patents, special contingency reserves, etc., can hardly be viewed in the same light. It is difficult, if not impossible, to apply the conventional statistical concepts of accuracy to such data because the figures are a byproduct of theories, conventions, and rationalization of self-interest. Because valuation is a subjective process the typical accounting statement is a combination of a hard kernel of relatively accurate figures, representing transactions to which the ordinary ideas of margins of error may apply, and numerous other figures that are fuzzy in character and definition because of the manner in which they are conceived. Yet, for all outward purposes, figures of both types may be indistinguishable in financial statements.

Even when one is not faced with the problems inherent in accounting data, it is not always possible to determine the degree of relative

accuracy with which measurement is carried out in the case of economic and social observations. Although the information sought is comparatively simple and the data are obtained though what purports to be a complete enumeration, errors creep into the final results—respondents may not provide correct answers due to misunderstanding of the questions asked, faulty recollection, inadequate records, desire to place themselves in a particular light or through sheer error, while the collectors of information may fumble by misrecording replies, or by omitting some units or persons who should have been covered.

Some of these difficulties may be minimized through the use of "probability" sampling which helps to reduce the task to a more manageable size and permits the use of more highly trained personnel to collect the information. But even then, although it may not be too difficult to estimate the probable error of measurement due to sampling, it probably will not be possible to account for response errors, or those committed in the course of collection and compilation of the information. As a practical matter, it is only in comparatively isolated instances that the margins of error can be computed in the case of economic statistics.

Thus, the use of estimating procedures in which judgment inevitably plays an important role, and of data collected by governmental and private agencies which are essentially byproducts of administrative routine, makes it virtually impossible to evaluate the relative accuracy of the various components of the national income and product accounts in quantitative terms. Little could be gained by the assignment of quantitative expressions of reliability to individual components so long as such evaluations are not derived from rigorous statistical procedures; and these cannot be used in the case of the national income data because much of the original source material does not lend itself to this type of computation.

Quantitative indicators of relative accuracy that are derived by judgment alone would also be misleading. Quantification of mere opinion, however well qualified, would inevitably give an erroneous impression of mathematical accuracy. Furthermore, the margin of error does not remain the same at all times, particularly when estimating procedures and available data change or when the benchmark data used become comparatively old due to the passage of time.

For these reasons, the committee does not believe that any useful purpose would be served by the publication of regular, quantitative estimates of error. The facts concerning the various sources of potential error are stated with great candor in the National Income supplement and, since the error sources are so varied in nature and so subject to change over time, anything more specific than general warnings about inadequacies does not appear to be justified.

If this reasoning is valid it also rules out a compromise suggestion, viz, to attach labels to the various published components of the national accounts indicating their relative reliability, one letter, e. g., identifying the components liability to the largest relative error. Such a classification, unless simply based on nonquantified judgment, presupposes the possibility of ranking the various components according to reliability by some objective criterion. If such a criterion existed it could also be expressed in quantitative terms.

(b) Verification of estimates

In practice, national income statisticians seek to improve the accuracy of their work in several ways. Initial estimates are made for small segments of national accounts, in the hope that, when independently estimated individual estimates are aggregated into broader components deemed suitable for publication, the errors in individual estimates will tend to offset each other. Pragmatic experience does, of course, confirm the theoretical expectation that errors in unbiased data tend to cancel out in the course of aggregation. This is far from certain, however, in specific cases, nor will this be the case when bias is present in the original data.

The reasonableness of particular estimates may sometimes be assessed by checking the conformity of the derived figures to some others in the light of some previously determined or determinable economic patterns. This type of check assumes that long-established patterns are substantially stable. It may perhaps be helpful when the primary concern is with the development of data suitable for the interpretation of long-term developments. However, when one is concerned with changes that take place over shorter spans of time, important deviations from long-term relationships are found more often than not.

Another method of verification is to compare the figures in the national income and product accounts which are usually derived from aggregative statistics—particularly figures relating to households—with blown-up sample data for the same items. However, the differences in concepts and the difficulties of obtaining adequate information from entrepreneurial and high-income families are still so great that this method of verification can be used for close comparisons only in exceptional cases, though it is often useful for checking orders of magnitude in items that are particularly difficult to measure satisfactorily by either method.[39]

The best check now available to national-income statisticians is the reconciliation of aggregates derived by the income method with the results obtained by the product method, i. e., essentially the comparison of gross national product with the sum of national income and indirect taxes. Unfortunately, not all the items represented on each side of the national account ledger are truly independent. The published "statistical discrepancy" between the income and product side thus cannot be taken as fully indicative of the degree of aggregate error in either or both of the two sides of the national income and product accounts. Moreover, the apparent consistency, or lack of it, of the final aggregates and the smallness of the "statistical discrepancy" is not necessarily indicative of accuracy of the global figures, but may be merely accidental.

There is a widespread impression that the National Income Division treats the statistical discrepancy as a simon-pure residual, letting it go where it will after entering the best possible estimates of the other items. Actually, the Division naturally has in mind the magnitude of the discrepancy and its change when making the multiplicity of estimates and adjustments that go into the preliminary data as they are being readied for publication. The corrections or adjustments

[39] For a more detailed discussion of the problems raised in such a comparison in the special case of saving estimates, see Reports of Federal Reserve Consultant Committees on Economic Statistics, hearings before the Subcommittee on Economic Statistics of the Joint Committee on the Economic Report, 84th Cong., 1st sess. (1955), pp. 78 ff.

then made are predominantly in the direction of minimizing the statistical discrepancy. The statistical discrepancy thus is a reflection of the fact that the processes of compiling income and product statistics are not, and cannot be perfect; but it is not necessarily a measure of the imperfection. Nonetheless, the comparatively small magnitude of the statistical discrepancy in the national income and product account for most of the last 30 years [*] may be regarded at least as partial evidence for the fundamental validity of the estimates.

Some users of the national income and product statistics urge that their utilization in practical analysis would be greatly facilitated if the statistical discrepancy were allocated by the producers of the data and not shown as a separate item in the accounts. The committee was about evenly divided on this suggestion. Several members felt that the publication of the discrepancy serves the useful purpose of warning users that the data are subject to error. Others thought that it would be more convenient to have the discrepancy allocated and that the estimators themselves are better qualified for this allocation than outsiders. All members of the committee recognized that the estimating process becomes more complicated if the discrepancy is eliminated—not only because its allocation involves additional work, but primarily because making revisions in individual series would entail numerous complementary revisions just to maintain consistency in the accounts. For this reason alone, the committee believes that allocation of the statistical discrepancy should be applied only to the annual estimates, if it is considered at all, and that no attempt at allocation be made in the quarterly estimates. In addition, before publishing allocations even for the annual data, the National Income Division should first experiment with various approaches in order to determine, in a pragmatic fashion, the extent to which this departure from present and past practice would enhance, or detract from, the usefulness of the data.

(*c*) *Revisions*

(1) *Magnitude.*—A different gage of the relative accuracy of national accounting data is offered by the periodic revisions of the estimates following the publication of additional underlying statistical information. Analysis of these revisions does permit some judgment in the light of new data of the nature of the previously made extrapolations or estimates of levels. But an evaluation of the reliability of any one series cannot be based entirely on the number and extent of past revisions, since the lack of revision is not necessarily indicative of the reliability of the previous estimate—it may be entirely due to the absence of newer data.

In practice, however, it appears that the series that are based on the least reliable data are subject to the largest revision. The committee has examined the successive revisions of all of the more important primary components of the national income and product accounts, both in the annual and the quarterly estimates. Although we have not included statistical summaries of the comparisons in this report, primarily because any one, or even several, measures of change

[*] The discrepancy exceeded 2 percent only in 1 year (1946—2.1 percent) from 1929 through 1955 and was below 1 percent in 18 of the 27 years. It was positive (gross national product exceeding national income plus indirect taxes) in 21 and negative in 6 years.

between revisions may be misleading, the findings corroborate what is already known generally about the reliability of the basic data. For example, estimates of such volatile items as inventory change, capital formation, and corporate profits are subject to rather substantial revisions. Similarly, the estimates of entrepreneurial incomes are subject to large revisions, since there are no reliable indicators of current change in such incomes. On the other hand, the larger components of the national income series—e. g., wages and salaries—and the aggregates both of income and product change relatively little between revisions.

(2) *Frequency.*—In view of the paucity of current information on the movements of a number of key items in the accounts, data for current and recent periods must be regarded as provisional and subject to revision. Nonetheless, complaints are frequently heard that the revisions are too frequent and the National Income Division is urged to keep the number of revisions to a minimum.

One reason for these complaints is that revisions sometimes confuse the users of the statistics and impose additional work in keeping records, charts, and analyses up to date. The committee feels that confusion is more likely to result from withholding the revised and presumably better data than from promptly publishing the corrections. The inconvenience caused by changes is real, but the choice between remaining uninformed of revisions and making the effort necessary to become fully informed seems clearly to be with the latter.

A second argument that has been advanced by those who favor fewer revisions is that they create a feeling of insubstantiality and thus undermine the authoritative character of the data. Authority, however, cannot be created by perpetuating error. What is not an error in the first instance becomes an error if it is repeated after information making possible a correction is available. The revision should be made in routine fashion and frankly presented to the public—not as an admission of error, but as a necessary part of the process of compiling sound data.

A final argument against making frequent revisions is that, by postponing them, the possibility of revisions in the wrong direction will be avoided and compensating errors in other series may result in an averaging out that will render revision unnecessary. The committee sees no merit in this argument either, since the hope that the figure originally published will eventually be justified by unforeseeable contingencies is hardly a sound basis for perpetuating a known error. Moreover, even if a revision in one component is later offset by a revision in another component, it is always better to have the best available information about every component currently.

It is the committee's view that the need for revisions of the totals can be minimized only by improving the quality of the underlying statistics to such an extent that fewer revisions will actually be necessary. Until such improvements can be made, it is better to admit the imperfections of the data and to educate the public in the use of imperfect statistics. The analytical usefulness of the data currently being published is so great as to overshadow criticism arising from unavoidable deficiencies. The most important pleas of the users is for something more—for further improvements—and not for any curtailment of what has already been achieved.

In view of the provisional nature of the initial estimates, revisions should be made and published whenever the accrual of further information makes significant corrections in the earlier published estimates possible. The committee believes that the general guiding principle should be to make revisions each quarter—at the earliest publication date after there is a reasonably firm basis for the correction. This principle should apply not only to the last quarterly data published but also to any previous quarters for which later data clearly indicate the necessity for revision. It should apply also even if the estimates have already been revised on more than one occasion. Similarly, if new information discloses the need for significant corrections in the annual estimates, they should be made at the earliest possible time. Such a policy would avoid the perpetuation of error in current quarterly estimates simply because the previous annual figures have not been revised. The committee recognizes that, especially in the case of the annual data, it would be very time consuming to make the necessary revisions in all of the income and product tables when one or a small number of items have been revised, and we do not contemplate that this be done. What we have in mind is the publication of revised figures for important components when new data show that the original figures are overstated or understated by significant amounts. Revisions of all the basic tables affected by the change should be reserved for the annual supplement.

(d) Steps toward greater accuracy

The kinds of improvements needed in the primary data sources from which national income and product data are drawn are fairly well known among experts. They include the undertaking of new surveys, the improvements of existing surveys in terms of reporting samples and of detail covered, and the regularization of censuses and other benchmark sources. Specific recommendations regarding the type of needed information have been presented to the committee by George Jaszi in a memorandum reproduced as appendix E of this report. Since these recommendations are based on the experience of the statisticians in the Division in actually preparing the estimates, the committee has given them serious consideration and believes that they should be implemented as rapidly as feasible. The areas in which action is most urgently needed are discussed in section 2 of this chapter.

Aside from the need for adequate budgets to improve the basic data—which, of course, is of decisive importance—more emphasis should be placed on research. Suitable revision of present procedures cannot be accomplished without direction from research and analysis designed to define data needs more carefully.

The committee believes, however, that the provision of additional resources for research as well as for the collection of basic data would not entirely solve the problem. Unrelated efforts by various agencies with larger resources, though capable of effecting improvements in many respects, might leave many of the existing gaps. Progress demands a higher degree of mutual understanding and cooperation on the part of all concerned. For this reason, concentration on planning and coordination should be continuous.

To avoid the inefficiencies that may result from lack of coordination, periodic surveys of the needs of the National Income Division should be instituted under the auspices of interdepartmental commit-

tees or the Bureau of the Budget. In the course of such reviews, recommendations could be formulated for improvement in the accuracy of some of the presently available information, the gaps in the available body of statistics could be identified and plans made for their elimination, ways could be sought to speed up the release of tabulations or to regularize their collection, and other suggestions could be made for better adaptation of statistics for national accounting purposes without affecting their utility for the primary purposes for which they are designed. Conceivably, private research agencies might be requested from time to time to sponsor such periodic reviews through the undertaking of appropriate inquiries or holding joint conferences of interested users and producers of the data.

(e) *Improving public understanding*

Since the national income and product accounts are relatively difficult for the layman to understand, it is in some respects quite remarkable that they are used and quoted so widely. This is, of course, attributable to the fact that the accounts present information that is of value to many different people and for many different purposes. It is still true, however, that a large part of the public does not understand the meaning of the national income and product statistics, and that only a few technicians are familiar with the details of their shortcomings.

A system of national income and product accounts that is designed to portray in summary fashion the manifold transactions of an economy as complicated as ours must make a compromise between presenting a broad picture and giving adequate information which implies considerable detail. The task of finding such a compromise is extremely difficult because the accounts are essentially and necessarily complicated. In formulating its recommendations the committee recognized the need for preserving as much simplicity as possible. Some of the committee's recommendations are designed to increase the clarity and understandability of the accounts. Nevertheless, in a few cases in which there appeared an urgent need for more detail, the committee recommended that a finer subclassification of aggregates be provided even though it increases the complexity of the accounts.

It should be recognized that the full set of accounts would be published only once a year in a special publication designed for the use of experts in Government and various research organizations of business, labor, agriculture, and in academic institutions. In the future, as in the past, these detailed accounts could be used as worksheet information from which various summaries will be derived depending on the purposes to be served. In the past, use was made most frequently of gross national product tabulations giving only the expenditure data of the accounts. The President included for the first time in the budget message of 1946 a tabulation that contrasted income, expenditures, and excess or deficit for each major sector of the economy. This summary table has been presented subsequently in somewhat improved form in the President's Economic Reports.[61] Also the Joint Economic Committee has been using a similar presentation as a frame of reference for the staff projections which have been pub-

[61] See e. g., The Economic Report of the President, January 1957, table B–6, p. 123.

lished regularly in its annual reports.[62] A summary table of this type, based on the revised income and product accounts which we proposed earlier, is shown in table E of chapter V.

The committee believes that the improvements it recommends will make more meaningful summaries possible than could be derived from the present accounts. However, the committee does not wish to recommend one standard form of summarization that would be used for all purposes. It believe that, if its recommendations are realized, the basic system of accounts will be so improved that various users can derive from its summaries that best serve their particular purposes. Experimentation with different methods of summary presentation should be continued by the National Income Division, the Council of Economic Advisers and the Joint Economic Committee in the interest of further simplification and adaptation to various uses.

The committee also believes that consideration should be given to the preparation of a popularized description of the accounts—the structure, the concepts used, the limitations of the data, and their possible applications—for the use of the intelligent layman. Such a description should not supersede or infringe on the technical documents of the type of National Income. It will be helpful, in the committee's opinion, to the widening circle of persons interested in the end results, and will materially improve understanding of this important source of statistical intelligence.

The National Income supplement satisfies most of the needs of the more technically inclined users of the national income and product accounts. However, the information now supplied is occasionally not sufficient for their purposes. In some cases, the description of methodology is too general; in others, the data are not provided in sufficient detail. It has been suggested, for instance, that descriptions of various estimating procedures be presented in sufficient detail to permit the user to duplicate the published figures from the original sources. Such descriptions might be provided in looseleaf form to permit ready supplementation of the basic documents whenever major changes in operating procedures take place.

Another suggestion is that more of the worksheet detail behind the published data be made available to the public.[63] Publication of a more detailed methodology and of more worksheet data would not only be useful to outsiders; it would also give the public a greater appreciation of the problems encountered in the compilation of national income and product data, and would stimulate suggestions for improvement by users who may be expert in one or more of the detailed areas covered by the accounts.

Although the committee was inclined to view sympathetically the suggestion that a more comprehensive description of methodology be prepared, if found that there was little demand for it even among the experts who were canvassed. (See appendix C.) Since the number of respondents who felt the need for more detailed descriptions of methodology was very small, it is clear that there would be no point in devoting considerable resources at the present time to such a project.

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[62] See e. g., 1957 Joint Economic Report, 85th Cong., 1st sess., H. Rept. No. 175.

[63] The committee members know from their own experience as users that the National Income Division is extremely cooperative in satisfying requests for more detail if the information is reliable enough for public use.

On the other hand, there is a significant demand for more detail than is now published. Perhaps the best way of satisfying this demand, and at the same time of providing a better indication of the actual derivation of the estimates, would be to prepare a set of annual summary tables—at least for the more important series—showing the major steps in the derivation of the published figures from the information reported in the censuses and other basic sources. Table 38 of the national income supplement, which reconciles estimates of corporate profits with the data reported in Statistics of Income, is an excellent example of the type of table we have in mind. Some of these tables might be added to the national income supplement, but it would be sufficient to prepare them for distribution in mimeographed form in most cases. The committee appreciates that this cannot be accomplished overnight. However, it should be possible to space the work gradually over a period of years so that it will not interfere with the preparation of current estimates and needed revisions of past data.

2. EXAMINATION OF SELECTED COMPONENTS

(a) Unincorporated business profits

For the immediate future, the most important single step that could be taken to improve the accuracy of the national accounts would be to improve the data for nonfarm sole proprietorships and partnerships. The inadequacy of the underlying data for this sector of the economy affects the reliability of practically every important component of the accounts; e. g., saving, capital expenditures, depreciation, sales, inventories, and many others, but particularly that of profits. Although estimates of these items are currently included in the various accounts, they can be regarded as little more than informed guesses for the small-business sector. The annual figures are poor enough, but those for shorter periods are even worse, since there are no intra-annual surveys of the operations of unincorporated businesses except for a few scraps of information obtained from private accounting firms. This situation is no fault of those who are responsible for making the estimates. Indeed, the estimates have been made with great care and ingenuity, and every bit of usable information has been employed. The estimators have repeatedly called attention to the need for better data in this area, but the data-collecting agencies have not been able to comply with these requests, mainly because of the limitation of funds.

Unfortunately, it will not be easy to remedy this difficulty which is as old as national income statistics in the United States. "There was general paucity of data on entrepreneurial incomes and the estimates relating to this income type are the most subject to doubt." [64] is a statement which is as true today as when it was made 25 years ago.

The small firm is typically operated as a family enterprise, and its accounts are usually intermingled with those of the proprietor's household. Even the tax returns they file are seriously in error, as the Audit Control Study conducted by the Internal Revenue Service for the year 1948 demonstrated. This study indicated that "the 7 million 1948 income tax returns filed by individuals with business and professional incomes (including income from farming) are more fre-

[64] National Income, 1929-32, p. 9.

quently in error, have larger amounts of tax change, and produce more dollars of tax change per man-year of examination effort expended than is the case regarding the 45 million returns without business incomes. Almost half of the business returns contain tax errors and this frequency of error is more than twice the frequency found on nonbusiness returns." [65] On the basis of a similar study conducted for the year 1949, it was estimated that net profits of nonfarm business enterprises reported on tax returns were understated by an average of almost 20 percent, with the percentages varying greatly among different industry groups and ranging as high as 50 or more in some groups.[66]

The absence of reliable data for unincorporated business enterprises is surprising in view of the great interest frequently expressed by public and private groups in the fortunes of small business. There is virtual unanimity in this country that public policy should protect and encourage small business, yet we know very little about it. Very frequently, the profit ratios of small and large corporations are used as if they showed the relative profitability of small versus big businesses. In actual fact, small corporations constitute a small and unrepresentative sample of all small business—they number less than one-tenth of all small enterprises and are of considerably larger average size—so that any conclusions about small business in general that may be drawn from the profit levels and trends of small corporations must be regarded as highly tenuous. Improvement of the information relating to unincorporated enterprises is, therefore, urgent to provide the basis for the formulation of policy and not merely for purposes of national accounting. The two purposes are, of course, not in conflict since the national accounts provide a useful framework for the analysis of significant economic problems like the problems of small business.

More reliable data on the profits of unincorporated nonfarm enterprises are needed at three different levels: (1) benchmark data, (2) current annual estimates, and (3) quarterly and monthly estimates.[67]

(1) *Benchmark data.*—The National Income Division relies primarily on the information tabulated from schedule C of the Federal individual income tax return as the basic source of information on profits of these enterprises, supplemented from various sources. Since 1939, the sole proprietorship returns have been tabulated biennially in the detail required for national income estimating. The corresponding data for partnership returns were tabulated only for the years 1939, 1945, 1947, and 1953.

The 1953 tabulations to be published later this year will include information not only from the income statements of partnerships but also—for the first time—from their balance sheets. These data will permit a rough calculation of the saving of partnerships and will also be helpful in improving the saving estimates of nonfarm households.

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[65] Marius Farioletti, Some Results of the First Year's Audit Control Program, National Tax Journal, March 1952, pp. 71–72.

[66] Marius Farioletti, Some Income Adjustment Results from the 1949 Audit Control Program, Studies in Income and Wealth, vol. 23 (In press).

[67] To provide the basis for making recommendations to improve the estimates of unincorporated business profits, the committee requested Mr. Thor Hultgren of the National Bureau of Economic Research to examine the procedures used by the National Income Division in estimating unincorporated business incomes other than farm and professional enterprises. Mr. Hultgren kindly consented and prepared for the use of the committee a memorandum describing the procedures and the data used and suggesting methods of improving the estimates. The committee wishes to take this opportunity to express its gratitude to Mr. Hultgren for his assistance.

Unfortunately, the sole proprietorship return does not call for balance sheet information, so that there is no possibility of obtaining the balance sheet items for these unincorporated enterprises from tax sources.

The committee has been informed that the Internal Revenue Service now plans to tabulate the sole proprietorship and partnership returns every other year, probably in odd-numbered calendar years. Since this information is so important, we hope that nothing will interfere with these plans, particularly with the preparation of tabulations for both forms of legal organization for identical years. As it is by no means certain that all partnerships file tax returns, even though they are required to do so, to provide a check, all future censuses of business should distinguish between sole proprietorships and partnerships in the query on legal form of organization.

The Internal Revenue Service tabulations for the income year 1955 are now being prepared, but it is hardly likely that they will be completed before the end of 1957. A 2-year lag is apparently the minimum that must be expected, in view of the industry detail required for the tabulations. Thus, these biennial tabulations will be useful only for benchmark purposes and other sources will need to be developed for the current annual and quarterly estimates.

Even as benchmark materials, these data will have serious deficiencies because of the substantial amount of understatement, mentioned earlier, of profits on tax returns. Corrections for understatement are now based almost entirely on the Audit Control Study of the Internal Revenue Service for the year 1949. The committee believes that such a study should be conducted at least once every 5 years, and should cover not only individual and partnership returns, but also the returns of corporations. As we indicate elsewhere (see ch. X), regular audit control surveys are needed for purposes of estimating the size distributions of income as well as profits.

(2) *Current annual estimates.*—The budget for 1958 provided for tabulating selected information from the income-tax returns 1 year sooner after filing than has been feasible in the past. A recommendation in this direction was also made in a staff report of the Joint Committee on Internal Revenue Taxation. Such tabulations among other things would provide the information necessary to carry forward the benchmark data on profits of corporate and unincorporated enterprises for at least 1 more year. This proposal, which was estimated to cost $300,000, was turned down by the House of Representatives. The Senate report emphasized the merits of this program and recommended that it should be financed with available funds. The committee, therefore, hopes that this proposal will be implemented in the near future. These tabulations should become a regular source of information of great importance for the improvement of the national economic accounts.

Even if this proposal is implemented, data would still be lacking for making firm estimates of profits of unincorporated enterprises in the latest year.[68] Of necessity, such estimates will have to be pro-

[68] This difficulty could only be overcome if a way could be found to abstract and tabulate a few key items from partnership and sole proprietorship returns, as well as from individual returns, as they come into the district offices of the Internal Revenue Service. With full use of the possibilities of rapid microfilming and electronic computing it is not impossible that such data, based on a substantial sample of returns, could become available in time to be used in the preparation of the first annual estimate of national income and product. The time for such an acceleration of preliminary income tax tabulations—which in due course might become sufficiently detailed to be used instead of the tabulations now published in Statistics of Income—appears to be too remote to justify specific recommendations that presuppose its realization.

visional and subject to revision when the more reliable tax-return data become available. However, consideration needs to be given to the development of more current information. For this purpose, the committee recommends that three approaches be considered:

First, the Federal Trade Commission should enlarge the coverage of its corporate profits surveys to include corporations in industries other than manufacturing, with particular emphasis on wholesale and retail trade. Changes in profits of small corporations are already used as an indication of the trend in the profits of some unincorporated enterprises—though this should be done only with great care for the reasons set forth at the beginning of this section. If the Federal Trade Commission industrial coverage were enlarged, this method could be applied more generally.

Secondly, an attempt might be made to experiment with annual mail questionnaire surveys of sole proprietorships and partnerships to supply the necessary data. If the surveys were timed correctly, the respondents would probably use the information they submit with their tax returns as a basis for reporting. Such surveys may be expected to understate profits greatly, but it may well be that they would provide a satisfactory indication of year-to-year changes.

Thirdly, the committee has also considered the possibility of using more elaborate sampling of entrepreneurial families in the annual income surveys by the Bureau of the Census and the Michigan Survey Research Center for this purpose. We do not believe that this would be a fruitful approach, first, because it would be too expensive to obtain adequate samples to provide the industry detail that would be needed; and, second, because experience with these surveys indicates that the response error of entrepreneurial families is very large. There is, however, a possibility of making use of interview data by adopting a suggestion advanced by the Federal Reserve Consultant Committee on Saving.[69] This suggestion provided for drawing a probability sample of a few hundred, or at best a few thousand, respondents among the 4 million unincorporated enterprises now in existence, and envisaged intensive examination of respondents' records by interviewers thoroughly familiar with accounting methods. These interviewers would reconstruct the respondents' income accounts and balance sheets and would calculate the desired figures from their records, instead of relying on respondents to produce the required information from memory or with the help of occasional consultation of their papers.

(3) *Quarterly and monthly data.*—For estimates covering periods of less than a year, the task seems extremely difficult since most small-business men simply do not keep the necessary records. The quarterly and monthly estimates needed for completing the national and personal income totals are now made by projecting annual data forward on the basis of the movement of gross sales and changes in profit margins that may be inferred from available data, particularly from public reports of corporations and the Federal Trade Commission corporate profits survey. To the extent that these sources are strengthened, the quarterly and monthly estimates of unincorporated nonfarm entrepreneurial income will also be improved.

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[69] Reports of Federal Reserve Consultant Committees on Economic Statistics, hearings before the Subcommittee on Economic Statistics of the Joint Committee on the Economic Report, 84th Cong., 1st sess. (1955), pp. 185, 186.

The experience with the annual mail questionnaire surveys of sole proprietorships and partnerships suggested above may indicate that collection of data by mail is feasible. In that case, the surveys might be gradually converted from an annual to a quarterly basis. The committee believes, however, that major emphasis should be placed on the collection of annual data for the immediate future.

(*b*) *Inventory changes*

Next in importance among the items urgently needing improvement in the current national accounts is the change in business inventories. A large part of the difficulty in this case goes back to accepted business practice in accounting for inventory holdings and for profits or losses resulting when changes take place in the prices at which inventories are valued. In most concerns, actual physical stocks are checked and valued only once a year, and interim quantities or book values are estimated from purchases and sales, usually in dollar terms. Errors in the interim estimates can be corrected only after the annual inventory check. Furthermore, the established procedure of valuing inventories on the principle of "cost or market whichever is lower" introduces unrealized capital gains or losses into the earnings account, where they are typically treated as though they were realized. These and other distortions produced by the inaccuracies in the inventory records themselves or by the changing bases of valuation used in calculating profit or loss represent one of the most serious sources of potential error in the overall accounts.

This problem is most acute for short-term economic analysis. The extreme volatility of inventory changes is widely recognized. The primary focus of efforts to make improvements must therefore be the monthly or quarterly statistics of quantities and values from which the estimates of overall changes in inventories are derived.

An extended review of this subject has recently been made by the Federal Reserve Consultant Committee on Inventory Statistics.[70] Its published report included 32 recommendations to improve and supplement the data currently available.

The committee finds itself wholly in accord with the views expressed in that report and merely reiterates the following recommendations for special emphasis: That agencies compiling inventory statistics cooperate and integrate their efforts more closely; that negotiations be conducted with business concerns to improve inventory reports in various respects; that reports for independent retail stores be expanded; that additional information be obtained on accounting practices and on the prices significant for deflating book values in various lines; and that inventories be consistently broken down by durability and destined end-use in addition to the present classification by industry or type of business.

We also endorse the position taken in that report on the costs of effecting recommended improvements. Costs are presently small, and the potential returns from a moderate expansion of effort in this area are so great that the attitional outlays required are fully warranted.

(*c*) *Capital expenditures*

Limitations of time and personnel prevented the committee from undertaking as thorough a survey as it would have wished of the

[70] Reports of Federal Reserve Consultant Committees on Economic Statistics, hearings before the Subcommittee on Economic Statistics of the Joint Committee on the Economic Report, 84th Cong., 1st sess. (1955), pp. 396 ff.

adequacy and reliability of estimates of capital expenditures that are now embodied in the national product accounts and in flow-of-funds statements. Some of the committee members who have worked fairly intensively with these figures over many years feel that the estimates that are now of necessity used within the national accounts probably are subject to a wider margin of error than many other series. All members are convinced of the necessity of improving the accuracy of the estimates because of the crucial importance of these figures for assessing both the current economic situation and the business outlook. In addition, the committee is convinced of the importance of securing as soon as possible consistent estimates of total fixed investment classified (*a*) by type of producers' durable equipment and of construction, (*b*) by industry classification, and (*c*) by legal form of organization of the purchasing units.[71]

No breakdown of producers' durables by type has been published in the national income and product accounts for years subsequent to 1952. The chief reason is that, since the discontinuance of series collected by the National Production Administration during the Korean emergency, there has been no source of information on government (particularly Federal Government) purchases of producers' durables. This information is necessary for the allocation of shipments by producers between private and government purchasers. Its lack not only prevents resumption of the breakdown of producers' durable equipment but also has impaired the accuracy of the aggregate figure for producers' durables. In addition, such information is most pertinent to the committee's recommendation for a segregation and classification of capital outlays of the Government. The committee recommends that the Office of Statistical Standards explore ways to obtain the resumption of such data.

Construction estimates are seriously inadequate in quality. A program for the improvement of the estimates of residential construction has been proposed by the Bureau of Labor Statistics and the committee has not investigated this field in detail. We do know, however, that there are serious deficiencies in the available estimates of expenditures on additions, alterations, repair and maintenance of residential structures, and that the estimates of nonresidential construction, including new construction, are far from satisfactory. Detailed recommendations for improvement of the figures that now go into the national income and product accounts would be premature before a thorough study is made of the quality of the present data and the possibilities and means of obtaining more accurate figures. Such a study is consequently recommended by the committee. It might be made either by the suggested Research Section of the National Income Division; or, if no such section is organized in the near future, by a group of experts who can concentrate their attention on this field and have an adequate staff for a careful analysis of all relevant data.

A classification of capital expenditures by purchasing industry is now provided for about three-fifths of gross fixed investment by the

[71] The Federal Reserve Board's Consultant Committee on Business Plant and Equipment Expenditure Expectations unfortunately had to limit its study to the narrower field indicated in its title, and was not able "to review the available statistical series on past plant and equipment expenditures, except as this was necessary for an appraisal of the data on expectation" (reports of Federal Reserve Consultant Committees on Economic Statistics, hearings before the Subcommittee on Economic Statistics of the Joint Committee on the Economic Report, 84th Cong., 1st sess., 1955, p. 13).

Office of Business Economics-Securities and Exchange Commission survey of plant and equipment expenditures. The committee recommends that the size of the sample be increased, particularly in the nonmanufacturing industries, so as to permit the presentation of greater industrial detail (especially in the huge "commercial and other group") as well as to improve the accuracy of the aggregate. The committee further recommends that the Office of Business Economics provide a reconciliation of the plant and equipment series with the gross national product capital expenditure data; and that it develop an industry breakdown of the capital expenditures not included in the plant and equipment survey so as to complete an industry classification of the gross national product total for fixed capital expenditures.

The plant and equipment survey should also be utilized to improve the classification of capital expenditures as between corporations and noncorporate business. This breakdown, which is required to improve saving aggregates and flow-of-funds statements, as well as to develop sector saving and investments accounts, would also benefit from strengthening of the plant and equipment sample in nonmanufacturing industries.

These recommendations provide for separate classifications of total fixed capital expenditures by type, by purchasing industry, and by legal form of organization. The committee's recommendation for a cross-classification of fixed capital expenditures by type and by purchasing industry would go beyond this and may not be attainable in the near future.

(d) Saving

The committee has refrained from studying the adequacy and reliability of the statistics of saving now available as part of the national accounts for two main reasons.

First, these statistics have been investigated quite thoroughly less than 2 years ago by the Federal Reserve Board's Consultant Committee on Saving Statistics.[12] There would have been no point for the committee to go over the same ground again, necessarily in a much more cursory manner, the more so since two members of this committee served on the Consultant Committee on Statistics of Saving.

Secondly, the recommendations of the Consultant Committee have been studied, in accordance with the committee's suggestion, for over a year by the staff of the Federal Reserve Board. The committee understands that the Federal Reserve Board will be ready soon to recommend to the Office of Statistical Standards and to the agencies which furnish the main components of statistics of saving a coordinated program for improving the whole field of statistics of saving. The committee has every confidence from its discussions with representatives of the Federal Reserve Board that the Board's suggestions will fit in with the committee's own recommendations for improvement and expansion of the national income and product accounts and the flow-of-funds statements.

The committee, however, has given enough attention to statistics of saving, particularly with regard to their integration into a system of

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[12] Reports of Federal Reserve Consultant Committees on Economic Statistics, hearings before the Subcommittee on Economic Statistics of the Joint Committee on the Economic Report, 84th Cong., 1st sess. (1955), pp. 73 ff.

national accounts, to feel justified in endorsing the Consultant's Committee's recommendations,[29] particularly the development of: (*a*) a separate estimate of saving for nonfarm households, farmers, and incorporated business and private nonprofit institutions; (*b*) supplementary estimates of saving through consumer durables; (*c*) figures on gross flows of saving; and (*d*) corporate statements of sources and uses of funds of corporations on a quarterly basis.

(*e*) *State and local governments*

In recent years, State and local government expenditures have been growing more rapidly than the expenditures of any other major sector of the economy. Between 1950 and 1956, while gross national product increased 45 percent, purchases of goods and services by the States and local governments rose 65 percent. During the same period, the net debt of these units of government almost doubled—from $21 billion to $41 billion. A continuation of these trends, although perhaps not at precisely the same relative pace, is to be expected at least for another decade in view of the many demands on the States and local governments for increased services resulting from such factors as the growth in population, the continued move to the suburbs, the bulge in public-school attendance, the renewal and rehabilitation of our large cities, and the growth of industry and commerce. Accordingly, it is important for economic analysis, as well as for policy purposes, to have reliable information on the operations of the States and local governments. Much of this information—though admittedly not all—would be supplied if the set of accounts envisaged in this report (i. e., income and product accounts, national balance sheets and flow-of-funds statements) were available.

The conceptual problems of fitting the State and local governments into these accounts are generally similar to those raised in connection with the Federal Government, and will not be repeated here. (See ch. VII, sec. 3.) However, the data problems are much more acute for the State and local governments, because the information must be obtained from thousands of jurisdictions that do not keep standardized records and are not required to report periodically to any one centralized agency. For this reason, it is essential that the census of governments, which is now being conducted for fiscal year 1957 for the first time since 1942, should be repeated once every 5 years, as now provided by law. In addition, since the census will supply only periodic benchmark data, it will be necessary substantially to improve and enlarge the flow of data from the States and local governments on an annual and quarterly sample basis to assure satisfactory coverage of this sector in the national accounts. Steps that can be taken to achieve this objective are described below. The committee urges that high priority be given to these recommendations.

(1) *Quarterly nationwide data for the national income and product accounts.*—The National Income Division relies very heavily upon data compiled by the Bureau of the Census for much of its information on States and local government transactions. In particular, the annual Summary of Governmental Finances supplies nationwide aggregates on governmental receipts, expenditures, debt, and financial assets.

[29] See summary in Reports of Federal Reserve Consultant Committees on Economic Statistics, hearings before the Subcommittee on Economic Statistics of the Joint Committee on the Economic Report, 84th Cong., 1st sess. (1955), pp. 74–75.

As a basis for reasonably prompt nationwide estimates on a quarterly basis, however, this census report is recognizably deficient. For example, by August 1957, when the financial summary covering Government fiscal years ending in calendar year 1956 will be issued, the National Income Division will have had to prepare and issue estimates for six quarterly intervals subsequent to the most recent period covered by the corresponding census report. For such quarterly estimates or extrapolations, the National Income Division can draw upon several series of partial data—e. g., as to payrolls, assistance payments, and construction expenditures of States and local governments. In recent years, however, significant adjustments of the quarterly figures initially based on such series have been necessary when the annual census reports have ultimately become available.

More precise and more timely nationwide aggregates for this sector could be obtained on the basis of quarterly sample surveys with respect to major components of State and local government finances—i. e., at least tax collections, construction expenditures, and wage and salary payments. After a limited initial period of design, testing, and development, it should be possible to prepare relatively precise nationwide estimates on these items (with appropriate supporting detail—for example, showing construction expenditure separately for highways, schools, and other major purposes) within 60 to 90 days after the period covered.[74]

Taxes make up about 60 percent of all revenue of States and local governments, and construction and personal-service payments represent about the same fraction of all their expenditure. Addition of Federal grants on the revenue side and of public assistance amounts on the expenditure side—for which reliable current data are available from the Treasury and the Social Security Administration—would raise these proportions to around three-fourths of the receipts and expenditure totals for this sector. The remainder comprises relatively less volatile items—on the income side, mainly receipts from charges; on the expenditure side, current procurement, interest payments, and retirement-fund benefits. The committee believes that relatively close overall measures of current trends in State and local government finances could be developed even without specific intrayear surveys of these remaining components.

(2) *Biennial surveys of State and local government finances.*—Because the census of governments is a large-scale operation, authorized to be conducted only at 5-year intervals, its findings will be relatively tardy, and will be useful mainly as benchmarks for estimates in the national accounts. These estimates would be improved substantially if the Census Bureau were authorized and equipped to carry out the recommendation made in 1954 to the Secretary of Commerce by the intensive review committee on census programs[75] that biennial surveys be conducted, between periodic governmental censuses, to supply estimates on the finances of State and local governments.

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[74] Responsibility for quarterly surveys on employment and payrolls of State and local governments was reassigned from the Bureau of the Census to the Bureau of Labor Statistics in February 1955. If the more complete quarterly surveys recommended above are authorized, it would be desirable to coordinate the collection of payroll and other financial data so as to avoid imposing an unnecessary burden on [redacted] the reporting units of government.

[75] Appraisal of Census Programs. Report of the Intensive Review Committee to the Secretary of Commerce, February 1954.

The proposed intercensal surveys were suggested primarily for their uses in analysis of trends in governmental finance. However, their uses for national accounting should not be overlooked. In particular, they can be helpful for three specific purposes:

(*a*) To supplement the data in the quarterly surveys suggested above for receipts and expenditure items that do not vary greatly over short periods of time or that may be too complex to warrant insertion on quarterly questionnaires.

(*b*) To provide the basis for improved annual estimates of the number of State and local government employees and their earnings, which are included in the State-by-State personal-income series. At the present time, these estimates are prepared on the basis of a special survey conducted by the Census Bureau for only 1 month of each year (October).

(*c*) To provide information on the nonfinancial assets of State and local governments for purposes of national-wealth statements and the national balance sheet.

Therefore, the committee endorses the proposal of the Intensive Review Committee on Census Programs and urges that the first biennial survey of the States and local governments be taken for fiscal year 1959, i. e., 2 years following the census of governments.

(3) *Reconciliation between census data and national income and product data.*—As in the case of the Federal Government, data for the States and local governments which are derived essentially from budgetary accounts must be corrected for differences in timing, concepts, and coverage before they can be fitted into the national income and product accounts. Considerable confusion exists among users as a result of the exitsence of two series of data on receipts and expenditures of the States and local governments—one compiled by the Bureau of the Census and the other by the National Income Division. That there will be differences between the two series is inevitable, since they do not purport to measure the same things. However, the confusion would be minimized if the National Income Division added a table to its annual publication showing a detailed reconciliation between its own estimates and those of the Census Bureau. Together with the corresponding table for the Federal Government (see ch. VIII, sec. 3), the reconciliation statements would provide a useful summary of the differences between the data in government budgets and those that are entered into the national income and product accounts.

Chapter XII. Flow-of-Funds Statements Within the System of National Accounts

1. THE PRESENT SITUATION

(*a*) *Nature of flow-of-funds statements*

Flow-of-funds statements, first known under the more descriptive though less accurate name of money-flow statement, are the youngest member of the national accounting family. Morris Copeland's book, A Study of Moneyflows in the United States, published in 1952 by

the National Bureau of Economic Research, represents the first fully developed result of this aspect of national accounting.[76]

Within the system of national accounts, flow-of-funds statements are, in principle, characterized by about a half dozen main features. Some of these features have been omitted or imperfectly realized in the flow-of-funds statistics that have actually been compiled, while actual estimates embody features that are not characteristic of the flow-of-funds concept.

The main characteristics of flow-of-funds statements are:

(1) Coverage of all economic units within the Nation, private and public.

(2) Arrangement of units into sectors on the principle of grouping together decision-making units of similar economic characteristics.

(3) Inclusion of all transactions (both in their monetary and their real aspects) between two units which involve the use of money or credit, and consequently omission of imputations and internal transactions.

(4) Emphasis on financial transactions in addition to transactions in goods and services which are treated in less detail.

(5) Separate recording of gross flows in both directions, where economically relevant, instead of offsetting them and showing only the resulting net flow in the accounts.

(6) No systematic distinction between current and capital account sources, hence no aggregate figure for saving.

(b) Present status of work on flow-of-funds statements

Morris Copeland's pioneering study provided annual flow-of-funds statements for the years 1936–42. The Federal Reserve Board's basic document[77] contains detailed annual estimates for 1939–53. These figures differ sufficiently from Copeland's estimates to prevent their being used jointly without special adjustments. Somewhat less detailed annual figures for 1950–55 showing all essential magnitudes for the 10 main sectors[78] were published in the April 1957 issue of the Federal Reserve Bulletin. The detailed tables, comparable to those in flow of funds in the United States 1939–53 will, however, become available in mimeographed form, so that analysts soon will have at their disposal a detailed continuous set of figures covering a period of 17 years.

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[76] In addition to Morris Copeland's book (mimeographed drafts had been circulating for a few years before publication) the following documents discuss the basic features of flow-of-funds statements or provide actual figures for flow of funds in the United States:

(a) Flow of Funds in the United States, 1939–53 (Federal Reserve Board), 1955. A briefer mimeographed version, Progress Report on the Money-Flows Study, had been available since 1951.

(b) R. A. Young, The Federal Reserve Flow-of-Funds Accounts (International Monetary Fund, Staff Papers, February 1957).

(c) S. J. Sigel, A Comparison of the Structures of Three Social Accounting Systems, Studies in Income and Wealth, vol. 18, 1955.

(d) S. J. Sigel, A Comparative Study of Three Social Accounting Systems: National Income, Input-Output, and Money Flows (Harvard University thesis), 1955.

(e) Summary Flow-of-Funds Accounts, 1950–55, Federal Reserve Bulletin, April 1957.

[77] Flow of Funds in the United States, 1939–53, December 1955.

[78] Consumers, corporations, nonfarm unincorporated business, farm business, Federal Government, State and local government, banking, insurance, other investors, rest of the world.

In recent years simplified flow-of-funds statements, mostly limited to the main types of financial transactions, have been prepared by financial analysts interested in current figures and short-term forecasts of fund flows, since no Federal Reserve Board figures extending beyond 1953 were available until recently. These statements often provide semiannual and even quarterly estimates. The statement prepared early each year by the Bankers Trust Co. is probably the best known of these simplified statements of financial fund flows. The most ambitious of the unofficial projects in this field is the quarterly statement of flow of funds through the capital markets for the years 1953–55 which has been prepared by the National Bureau of Economic Research as part of its postwar capital markets study and which is expected to be published, at least in summary form, sometime later this year.[79]

No foreign country has as yet published a flow-of-funds statement that compares in detail or duration with those Copeland and the Federal Reserve Board have prepared for the United States. A number of countries, however, have been issuing statements of the main financial flows of funds, usually in rather condensed form. This is the case for instance for France, Western Germany, the Netherlands, and Norway.[80] It may be noted that no flow-of-funds statements have as yet been published for the United Kingdom or Canada, although a rather elaborate one is in preparation for the latter country.[81] Most of the more elaborate foreign flow-of-funds statements differ in one respect from the work done in the United States—apart from their being less detailed. They are closely integrated with the national income and products accounts and are prepared by the same organization that is responsible for the national income and product estimates.[82] [83]

(c) *The relation of flow-of-funds statements to the national income and product accounts*

Flow-of-funds statements constitute essentially an alternative selection from, or a rearrangement of, the same innumerable elementary transactions among and quasi-transactions within economic units that underlie the national income and product accounts. Differences, and considerable ones, between the two systems can, however, arise: because different categories of transactions are selected; because these transactions are grouped differently with respect to type of transaction or classification of transactor; because transactions are entered into the accounts at different values or at different points of time; and because transactions may be recorded after more or less extensive netting.

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[79] For a description of this project see 36th Annual Report of National Bureau of Economic Research, pp. 54–57; and article by M. Mendelson in Journal of Finance, 1957, pp. 159–166.

[80] For a brief description of these documents, as well as even more summary statements in this field, see background paper by the Statistical Division, Meeting on Methods of Monetary Analysis, 11th annual meeting of the International Monetary Fund, September 1956.

[81] See L. M. Read, The Development of National Transactions Accounts; Canada's Version of, or Substitute for, Money-Flows Accounts, Canadian Journal of Economics and Political Science, February 1957.

[82] This is not the case for Western Germany where the flow-of-funds statement is prepared, as in the United States, by the central bank. There exists in Germany also an unofficial estimate, prepared by the Institute of Economic Research in Berlin, which has no counterpart in the United States.

[83] Although there is no administrative integration between flow-of-funds statements and income and product accounts in the United States, the two can be reconciled, though it requires a considerable effort, as shown, e. g., in appendix B of Flow of Funds in the United States, 1939–53.

Under present United States practice, the main points of similarity and dissimilarity between the flow-of-funds statements of the Federal Reserve Board with the national income and product accounts of the National Income Division may be summarized as follows, glossing over minor differences in the two systems:

(1) The flow-of-funds system is a quadruple-entry system compared to the double-entry system of the national income products accounts, that is, a given transaction is recorded twice in the accounts of both economic units involved—once as a debit and once as a credit—while only one entry for each participating unit is made in the national income and product accounts.

(2) The flow-of-funds statement distinguishes a considerably larger number of sectors than the national income and products accounts now do. Specifically consumers, corporate business, nonfarm noncorporate business, farm business, the banking system (with four subsectors), life-insurance companies, pension plans, other insurance companies, saving and loan associations, and nonprofit organizations constitute separate sectors in the published flow-of-funds statements. No separate figures for these sectors are shown in the national income and product accounts, which distinguish, insofar as full detail is concerned, only between two private sectors—consumers (including nonprofit organizations) and business.

(3) The flow-of-funds statement provides information on net purchases and sales by each sector (where applicable or where figures are available) on the following 12 types of financial assets, none of which enter into the national income and profit accounts: gold and Treasury currency, currency and demand deposits, time deposits, savings and loan and credit union shares, bank loans, Federal obligations, State and local obligations, corporate securities, mortgages, consumer credit, and trade credit.

(4) The flow-of-funds statement is published only on an annual basis and so far only with considerable delay, while the main aggregates in the national income and product accounts are estimated quarterly and are released less than 2 months after the end of the quarter.

(5) The flow-of-funds statement includes figures for the holdings of claims and liabilities, though not of equity securities and tangible assets, of each sector, information which does not figure at all in the national income and product accounts. This feature, however, is not necessarily inherent in a flow-of-funds statement.

(*d*) *Relation of flow-of-funds statement to national balance sheet*

In United States practice the flow-of-funds statement has been coupled with a partial balance sheet for all the sectors for which flow of funds are calculated. Thus the Federal Reserve Board shows the amounts outstanding (amounts held for creditors, amounts owed by debtors) for the same items for which flow data are provided, except that corporate securities are limited to bonds. It will thus be seen that among important types of assets and liabilities the flow-of-funds statement omits corporate stocks, tangible assets, and net worth. In other words, what is provided is essentially a statement of the claims and liabilities of each sector. The reason for including these asset items with the flow-of-funds statement is in part statistical—

annual flows are obtained as the differences between holdings at the beginning and end of the year. The arrangement to some extent also reflects analysts' need for comparisons of flows with the related stocks, permitting among other things the calculation of velocities of turnover and the evaluation of the importance of indicated net changes in holdings.

(*e*) *Relation of flow-of-fund statements to input-output tables.*

Neither in theory nor in practice is there a close relationship between flow-of-funds statements and input-output tables. Indeed these two aspects of a comprehensive national accounting system are about as far removed conceptually and statistically as is possible within that system. The flow-of-funds statement emphasizes financial flows and collects all its data on an enterprise basis. Input-output tables omit financial transactions altogether, concentrate on flows of goods and services among producers, and must be derived from very detailed data collected on a plant and preferably even on a process basis.

2. RECOMMENDATIONS

The recommendations of the committee for a further development of the flow-of-funds statements are straightforward, and are in accord with the Federal Reserve Board's own plans as they have been reported to the committee, although the recommendations may sometimes go beyond what the Federal Reserve Board is ready to undertake at this moment or in the near future.

(*a*) A shift of the flow-of-funds statements to a quarterly basis is by far the most important recommendation. The Federal Reserve Board is already working in this direction and expects to have a set of quarterly estimates for the last few years—probably through 1957—available late in 1958. The Board's intention is at that time to establish the quarterly statistics on a current basis, releasing the figures not more than half a year, and possibly as little as 4 months, after the end of the quarter.

The quarterly flow-of-funds estimates will necessarily be less detailed than the annual figures now available, and they will be more subject to revisions. The estimates will, however, include all figures of substantial financial significance, though nonfinancial transactions will be shown only in considerably more summary form than in the annual statements. With respect to sectoring the quarterly estimates should be approximately as detailed as the annual statements for 1952–55 shown in the April 1957 issue of the Federal Reserve Bulletin.

(*b*) Speeding up the release of the detailed annual figures is also definitely contemplated by the Federal Reserve Board. It is expected that these figures can be made available approximately 9 months after the end of the year, and that at the same time revised figures for the 2 to 3 preceding years will also be released.

(*c*) In view of the detailed sectoring of the present flow-of-funds statements only a few additions to the sectors now shown separately are recommended.

(1) Probably the most important suggestion is the separation of the personal trust fund departments of commercial banks from consumer households. These departments are now administering about $80 billion of funds (excluding agency and custodian accounts), a

larger sum than any other group of financial institutions except the commercial banks themselves and life-insurance companies. No official, or even unofficial, information is available on the size and structure of personal trust funds or on their transactions. Setting up personal trust funds as a separate subsector will require the inauguration of a regular reporting system, probably on a sample basis. In the beginning annual statements may suffice, but quarterly reports should be the aim.

The absence of regular, comprehensive, reliable and, above all, standardized information on personal trust funds is one of the most important gaps in our financial information, keenly felt not only in the construction of flow-of-funds statements but also in the study of saving and in many other aspects of financial analysis. The committee is therefore inclined to assign a high degree of priority among its recommendations to development of a reporting system for personal trust funds administered by corporate trustees; and urges that the efforts which recently have been made in this direction, particularly by the Federal Reserve System and the American Bankers Association, be continued and intensified.

(2) A second suggestion in the field of sectoring, and one much easier to accomplish, is the division of the Federal and State and local government sectors into separate subsectors for general government activities, government enterprises, government financial agencies (insofar as not included with financial business) and government trust funds. Government enterprises would become a subsector of the broader business enterprise sector, while trust funds would constitute a subsector of the government sector.

(*d*) For intensive analysis several of the asset and liability categories distinguished in the present flow-of-funds statement are too broad. The recent separation, in the April 1957 issue of the Federal Reserve Bulletin, of demand from time and savings deposits and of consumer credit from trade credit and bank loans are steps in the right direction. The committee recommends that, as soon as possible, corporate securities be divided into bonds, preferred stock, and common stock; that mortgages be split into farm mortgages, nonfarm home and multifamily residential mortgages and other mortgages; that term loans be separated from other bank loans; and that United States Government securities be divided into those of short, intermediate, and long maturity.

(*e*) Presentation of transactions on a gross rather than a net basis, wherever the separate flows in both directions are economically relevant, is one of the main basic attractions of the flow-of-funds statements for the economic and financial analyst. The committee, therefore, suggests that continuous attempts be made to put the statistics of as many of the flows as possible, particularly those in the financial sphere, on a gross basis.

In particular, transactions in different types of securities (excluding short-term Treasury and similar securities for which gross flows are of less significance) by the various sectors should in principle be presented on a gross basis, showing separately issues and retirements by issuers and purchases and sales by each of the other sectors. The same principle should apply to mortgages, separating new loans from repayments; to term loans by commercial banks; and to installment loans—in short to all assets and liabilities with an original maturity

of more than approximately 1 year. (At the moment grossing is limited to transactions by issuers in the main types of securities.)

The committee realizes that the recommended shift to a gross basis will take considerable time and substantial effort, but feels that this shift should be the definite goal of a developing flow-of-funds system. Attempts to reach or approach this goal should be made continuously even if in any single instance they may affect only one type of asset and one group of institutions.

(*f*) Full cross classification of flows, leading for each type of asset or liability to a matrix that shows transactions between every one of the sectors distinguished in the flow-of-funds statement, appears to the committee to go too far beyond the data now available or in sight to need serious consideration. Such a cross classification would be formally parallel to the cross classification of the flows of goods and services in input-output tables, but seems to be of much less analytical significance for financial flows.

(*g*) To estimate the flow of funds for a given asset or liability by taking the first difference between holdings (or outstandings) at the beginning and the end of the period must always be regarded as only a substitute for the more informative and satisfactory method of separately determining the volume of acquisitions (issues) and of sales (repayments). At the present time, however, this substitute method is still often used in flow-of-funds statements—not only those of the Federal Reserve Board—chiefly because of lack of primary data on gross flows.

The absence of gross flow data not only reduces the amount of information available to analysts but is likely to lead to uncertainties and errors in the calculation of net flows whenever there are realized capital gains and losses or revaluations, and this is the common situation not only for stocks but for long-term fixed-interest-bearing securities. In that situation specific adjustments to the net flow estimate calculated from balances at the beginning and end of the period must be made, using the profit-and-loss statements of the institutions involved in the transactions. Since these statements are rarely available in sufficient detail rough estimates usually must be resorted to. Because of these difficulties adjustments to the net change in holdings as shown by opening and closing balance sheets are made only for some sectors and assets in the Federal Reserve Board's flow-of-funds statements.

The extension of these adjustments to other groups of transactions and to other assets and their improvements constitute one of the most important steps in refining flow-of-funds statements and in adapting them to a closer analysis of the capital market. The committee recommends that considerable attention be devoted to this aspect of the flow-of-funds statement, although the derivation of net flows as the difference of separate estimates of acquisitions and disposals should remain the ultimate objective.

(*h*) In the longer run the further development of the flow-of-funds statement should be sought, in the committee's opinion, more in the direction of increasing the number of subsectors than in the separation of assets and liabilities beyond the extent suggested under recommendation (*d*). Specifically, the present very large nonfinancial business sectors (both corporate and noncorporate) might be split into

about half a dozen subsectors covering, e. g., manufacturing and mining, public utilities, trade, services, and real estate.

Consideration might also be given to any alternative form of subsectoring that would segregate the large corporations for which more detailed and frequent data are available from the mass of medium sized and small enterprises. Such a separation will probably gain in importance with the spread of electronic accounting among the larger corporations, as this may increase still further the gulf between the information available for them and for smaller corporations, and may make it necessary to derive the figures for the two groups of corporations by quite different methods and on a different time schedule.

Subsectoring of the present consumer sector may be still further off. As far as can be judged from the material likely to become available and the requirements of users the introduction of a small number of subsectors based on the source of consumers' income will probably be the first step to be given serious consideration.

3. INTEGRATION OF FLOW-OF-FUNDS STATEMENTS AND NATIONAL INCOME AND PRODUCT ACCOUNTS

The arguments for or against closer integration of the different parts of the system of national accounts are discussed elsewhere in the report. Proceeding from the assumption that we want to go as far in integration as is feasible without either needlessly complicating the resulting systems or disproportionately increasing costs, the objective should be to minimize the differences now existing between the flow-of-funds statement and the national income and product accounts. These differences are in structure of accounts, coverage of sectors and transactions, classification of transactions, degree of netting, scope of consolidation, timing of some transactions, methods of valuation, estimating procedures, and sources of data.[84] The objective can be approached by gradually eliminating all those differences that are the result of the peculiarities of the origin of the two systems, or are essentially arbitrary in nature, or can be abandoned without serious loss to one of the systems, even though they possibly may have some value to some users. (More correctly, the criterion should be whether the loss to one of the systems from the point of view of its specific objective is regarded as more than offset by the advantage of integration which facilitates joint use of the two systems.) In many cases integration on this basis will be easy to achieve, in others it may involve overcoming considerable substantive difficulties and differences of opinion. The specific differences between the two systems which raise the problem of mutual adaptation are generally too complicated and technical to be discussed here and in many cases not yet sufficiently explored to lend themselves to simple recommendations. The principle enunciated at the beginning of this paragraph will therefore have to suffice, and ought to suffice provided final integration of the two systems is adopted as the goal and there is the will to effect a gradual mutual adaptation until full integration can be achieved.

One of the most important fields for integration of flow-of-funds statements and national income and product accounts is saving and investment. As indicated in chapter V, the flow-of-funds statement

[84] Some of these differences have been mentioned under (c), above.

produces, with only few changes—primarily the insertion of depreciation allowances—an estimate of saving which fits perfectly into the national income and product account and can be used as a check upon the direct estimate of aggregate saving which is inherent in the national income and product account, viz, the difference between current income and current expenditure. While that residual estimate of saving is by its very nature indivisible, the measurement of saving derived from the flow-of-funds statement has the great advantage from the point of view of economic analysis of showing the various forms of saving and dissaving. Tables A–13 and 14 in appendix A exemplify this integration.

Chapter XIII. Input-Output Tables

1. The Nature of Input-Output Tables

An input-output table is, so far as the form of presentation goes, a table which shows the flows of commodities and services—represented by their money value—during a given period (usually 1 year) between a number of sectors, here generally called industries (whence the alternative name of "interindustry analysis") into which the economy is divided. Each entry, or cell, identifies the value of commodities supplied by one and received by another "industry"—the term being used for any aggregation of economic units or even production processes within a firm or plant. An input-output table thus is a complete from-whom-to-whom breakdown of all commodity and service flows within thet Nation and between the Nation and foreign countries. Since as a rule the classification of economic units into industries is the same for suppliers and recipients of goods and services the input-output table generally has the same number of rows and columns and hence the form which is called in algebra a square matrix. Input-output tables vary in size from an aggregative table distinguishing less than 20 supplying and receiving industries, and hence having less than 400 cells, to very detailed documents with over 400 industries and more than 160,000 cells, many of which, of course, may be empty.

Input-output tables may be regarded as simply an alternative form of presenting commodity and service flows within a system of national accounts and are so treated in chapter V and appendix A. In that capacity they provide a powerful check on the completeness and compatibility of much of the information used in building up national product and income estimates.

In practice, however, input-output tables have been developed primarily for a second, more ambitious purpose; namely, to serve, together with auxiliary information such as prices and technological data, as a tool of decision making in public policy and private investment planning by business enterprises. This use of input-output analysis is called economic or mathematical programing. For this purpose input-output coefficients and production functions are derived from the input-output data by the mathematical process known as matrix inversion, which requires modern high-speed calculating machines if the number of industries distinguished is substantial.

Input-output tables may depict a closed or an open system. In a closed system all industries are assumed to be completely interdependent and their inputs and outputs to be functionally related. For ex-

ample, consumer households may be considered to constitute one industry having consumer goods and services as input, producing labor as output. In an open system, input-output analysis regards some industries as being related to the other industries in the economy, but not functionally dependent upon them. Hence, in this case consumer goods and services and/or producer goods, Government services and exports are regarded as final uses or output, i. e., autonomously determined by factors outside the input-output system. Labor and management services are regarded as original inputs, but not as produced by a household industry within the system. Also the construction of plants and the production of producers' goods has been usually regarded as final output of investment goods—autonomously determined—even though in a truly dynamic model investment goods should be regarded as input for future output and hence as an integral part of the mutually interdependent input-output system. Thus, the tables in their present open system form answer primarily the question: What output of raw materials and semimanufactured goods is needed to produce a given volume of final output; or what output of the various industries would be needed to meet an assumed demand for final goods and services, a magnitude which is either identical with or can be derived from gross national product. This links the input-output tables with the national income and product accounts.

2. HISTORICAL BACKGROUND

(a) United States

Input-output tables for the United States were first presented in 1941 in W. W. Leontief's work, The Structure of the American Economy, 1919–1929. During World War II the use of the input-output technique for analysis of war production plans was considered but did not materialize. However, in 1941 the Bureau of Labor Statistics requested Wassily Leontief to construct an input-output table for 1939 which was used in connection with the analysis of postwar economic problems. This input-output table divided the economy into 96 sectors which were later aggregated into 42 sectors.[85]

After the war, mathematicians and economists developed methods for economic (or mathematical) programing. In order to test the economic feasibility of various strategic plans, an up-to-date input-output table for the American economy was required. The National Security Resources Board, the Bureau of Labor Statistics, and primarily the Air Force, supplied funds for the construction of a comprehensive input-output table for the year 1947. This table was constructed by the Bureau of Labor Statistics in cooperation with a number of Federal agencies and some university research organizations. The 1947 table was based on data for more than 400 industries which were then consolidated into about 200 industries.[86] The testing of the usefulness of such an input-output table for mobilization planning was discontinued in 1953 before the testing program was completed.

[85] The aggregated table is described in Full Employment Patterns, 1950 * * *, appendix A (Bureau of Labor Statistics, May 1946); it is also reprinted as table 24 of W. W. Leontief, The Structure of the American Economy, 2d edition, 1951.

[86] For a brief description, see W. D. Evans and M. Hoffenberg, The Interindustry Relations Study for 1947, The Review of Economics and Statistics, May 1952. For details see Input-Output Analysis: An Appraisal, Studies in Income and Wealth, vol. 18, 1955, and the accompanying Input-Output Analysis Technical Supplement, National Bureau of Economic Research, 1954.

The input-output studies in the United States were conducted relatively independently of the national accounting work, at least administratively. National account data (especially gross national product) were used for making the economic projection of final demand. Input-output coefficients then provided the means for relating the input and output of various industries to the stipulated final demand of future years. However, the work was done essentially outside the National Income Division, primarily by the Bureau of Labor Statistics and in the Department of Defense.

(*b*) *Abroad*[47]

One or more input-output tables now exist for the following countries: The United Kingdom, Norway, Denmark, the Netherlands, Italy, Canada, and Japan. Discussion of plans for input-output work is also taking place in Sweden, France, and Yugoslavia. In those countries where there is a central statistical office (such as Norway, Denmark, the Netherlands, and Canada) the input-output work forms an integral part of the country's unified statistical system and has developed to a considerable extent as a byproduct of the national accounts. The latter is true even in countries where statistics are not centralized administratively.

In putting together any input-output table, there are alternative ways of classifying and tracing the flows of goods and services throughout the economy. The criteria chosen in setting up the accounts, however, are not neutral in terms of their economic implications. In most of the above countries where foreign trade is extremely important, the success or failure of an input-output table and its analytical uses may well rest on the estimators' ability to portray realistically imports and exports, e. g., to distinguish between the so-called competitive and noncompetitive imports. Where foreign trade is of crucial importance for the economy, it is not adequate to treat imports and exports in the somewhat arbitrary manner as done in the United States.

3. POSSIBLE APPLICATION OF INPUT-OUTPUT TABLES

Input-output studies are still in an experimental stage. Therefore, statements about the usefulness of these tabulations must to some extent be of a speculative nature. Nevertheless, more can be said today than a decade ago when the first large scale attempt at developing an input-output table was initiated.

(*a*) *National defense and survival planning*

As mentioned earlier, the 1947 input-output table was developed primarily for the purpose of testing the economic feasibility of various mobilization programs. At that time the problem was: What amount and what kind of war material production would be economically feasible if the United States productive capacity over a period of persumably several years had to be converted from a peacetime to a full war mobilization basis? This question arose out of World War II experience. Input-output tables would be of great usefulness for examining this kind of problem.

However, military strategy has since been adapted to the use of atomic weapons. Today a major war may be decided by weapons in

[47] See Input-Output Tables: Recent Experience in Western Europe, in United Nations, Economic Bulletin for Europe, May 1956.

existence rather than by an economic potential for developing a munitions industry. Therefore economic feasibility studies for defense planning, though still important, are no longer of the same significance that was attributed to them on the basis of World War II experience.

Nevertheless, representatives of the Office of Defense Mobilization and the Defense Department have pointed out the importance of input-output analysis in connection with planning for postattack survival and possible bomb damage analysis. The question here would be: How could the economy best adjust to dislocation and destruction of parts of its productive capacity? To deal with these problems would require a finer statistical breakdown by products and regions than is required for general purpose tabulations. However, the availability of a general input-output table would greatly facilitate such analysis and improve programing efforts for national defense and survival planning.

(*b*) *Other Government purposes*

The Government participates in long range investment planning in the field of resource development such as water supply, energy supply and land reclamation. In other fields the Government is involved in long range planning through its conservation policies. In appraising the future use of resources national accounts proections are a primary tool.

Input-output tables can be quite useful for identifying individual industries or key products within the projected national aggregates. They can also be of use in the examination of specific problems of economic policy—such as in the examination of the impact of foreign aid or of changes in tariff policy on the domestic economy. In such a situation input-output tables would help trace the impact of the foreign aid program not only on industries directly affected but also on those activities indirectly affected by foreign aid shipments or by imports.[38] The input-output approach could also be used to help measure the economic impacts on various industries and activities of a change in general government policy—e. g., to indicate what would be the effect of a program of military disarmament on various sectors in the economy.

(*c*) *Business investment programing and market analysis*

A growing number of corporations are engaged in long term investment planning which, in many instances, involves a four step approach:

(1) Projecting gross national product and its major components.

(2) Projecting the market for particular lines of products within these gross national product aggregates.

(3) Determining the share of the market the particular firm uses as a target for planning purposes.

(4) Determining the investment program which should enable the firm to reach its target.

In making the transition from the first to the second step an input-output analysis can be very helpful to business decision makers. It

[38] See The Foreign Aid Programs and the United States Economy, a study by the National Planning Association prepared for the Special Committee of the Senate To Study the Foreign Aid Program, No. 9, 85th Cong., 1st sess. (March 1957).

permits businessmen to estimate the increase in output for particular industries (or products) which would be in accord with the posited increase in final demand (gross national product broken down by end products).

In this way business is aided not only with regard to its market analysis outlook, but also with regard to its investment plans. Many competent analysts have pointed out that this kind of analysis is not only useful for business from the aspect of sustained profitability, but that it also introduces a factor into the economic system which will tend to promote balanced economic growth. Its availability and use will make possible what has been called a dynamic market analysis, that is, an appraisal of future markets within the frame of reference of a growing economy. We believe that the Government should assist this development by the supply of the proper statistical tools.

A number of larger firms employ their own economic analysis staffs competent to make use of input-output tables for purposes of investment planning and market analysis. Increasingly, consulting firms are concerning themselves with this kind of work on a contract basis. The input-output technique could be put to widespread use by a great number of middle sized firms through recourse to the modern computing equipment available to those consulting firms.

(*d*) *Input-output tables as a check on statistical accuracy*

Basically, an input-output table is an arrangement of statistical information within a certain accounting framework. It can be used, as indicated above, for identifying gaps and inconsistencies in that information. For that purpose, summary tables with a limited number of industry sectors could indicate where additional statistical information is needed. In general, this purpose should be regarded as a byproduct, rather than as a primary objective of input-output tables. Nevertheless, the preparation of input-output tables, together with the other systems of national accounting, can serve as an integrating force in economic statistics, particularly since the emphasis of the input-output approach is real products and services as contrasted with monetary flows and income transactions of the other major national accounting techniques. This possibility is not entirely theoretical. It was the work on the 1947 input-output table which pointed possibly more conclusively than anything else to shortcomings of the current construction statistics and gave impetus to the drive for improving these statistics which is still underway and which the committee has endorsed in chapter XI, section 2.c.

4. POSSIBILITIES AND LIMITATIONS OF INPUT-OUTPUT TABULATIONS

We recognize that after about 15 years experience here and abroad input-output statistics are beyond the pilot study stage. Nevertheless, they are still of an experimental nature.

One may envisage at some future time that there might be developed an accounting system which would automatically yield the information needed for a comprehensive continuous census of industrial and business activities, and would thus at the same time provide the raw statistical material for the national income and product accounts, for flow-of-funds statements and for interindustry flows of products and services. Information would proceed from the busi-

ness unit directly to the final summarization in national accounts and input-output tabulations. With the prospect for wider use of electronic bookkeeping and processing equipment, such an outlook may be visionary but not utopian. (See also ch. XV.)

For a considerable time to come, however, we have to resign ourselves to the fact that there will not be a steady flow of the required information from firms and households for use in final national accounts. Particularly, the information provided by business firms in the census and the other basic statistics sources will not be in a form which can be directly used for input-output tabulations. Estimates and adaptations from available statistical information must still be made which can be used for the input-output tables. Particularly, the census information with respect to the relationship of capital equipment to production is very scanty, to say the least, a deficiency which makes it difficult to place the input-output tables on a dynamic basis.

The construction of a comprehensive interindustry table is a major statistical undertaking which can be done only once every few years. In spite of the fact that the censuses do not yield all needed information, they still remain the basic source of data. Therefore, the input-output tables should be constructed preferably for years for which major economic censuses, particularly the census of manufacturing industry, are undertaken.

However, it is possible to keep such an input-outpt table up-to-date by patch-up work for a limited period. For example, the 1947 table has been revised up to 1952 by modifying input-output coefficients where substantial changes in technology or substitution in the use of raw materials have occurred.

We have already suggested that the Government's general input-output work should be of the nature of general purpose estimates. These estimates are based primarily on the census information which uses the "establishment" as a statistical unit. The breakdown by industries should be fine enough to achieve a satisfactory degree of homogeneity within each industrial group. But it should not be so fine that the output of many establishments would belong to several industry groups, thereby requiring extensive splitting of inputs. A 400 to 500 industry breakdown appears to be the maximum compatible with this principle.

For specific purposes, particularly for purposes of postattack survival planning and vulnerability analysis, special tabulations may be required. These may necessitate even more detailed information and in crucial areas may identify input-output relationships for individual products and industrial processes. A general purpose tabulation can only provide a frame of reference for such special analyses.

5. RECOMMENDATIONS

The committee feels that input-output work should be considered as an important aspect of the national accounting system.

(*a*) We recommend that an abbreviated interindustry table be constructed on the basis of 1954 census data.

(*b*) A fairly detailed input-output table should be constructed on the basis of the 1958 economic censuses. This committee is not in a position to make a recommendation as to the exact detail that would

represent the best compromise between the needs of the users and the unavoidable financial limitations. In formulating the schedules for the 1958 censuses, consideration should be given to questions which would give information needed for the input-output tabulations. For example, information is needed regarding value added estimates for the trade sector. For manufacturing establishments a more inclusive listing of the various input materials consumed in the production process would be useful, and more detailed information regarding capital equipment would be desirable. It is also recommended that the census provide more information on the sales of specific products from manufacturing industries, using the same method as that developed for the 1954 Census of Manufactures. The cost of gathering specific statistical information (e. g., on advertising, insurance, etc.) may be too high to be included in a complete census tabulation. In this case, consideration should be given to collecting such data periodically on a sample basis as part of the census annual survey of manufactures. This kind of information would fill some of the statistical gaps in constructing a 1958 input-output table.

(*c*) Experimental work on capital-output coefficients and on regional breakdowns of input-output tables should be encouraged. (See discussion in ch. XIV, sec. c.) As far as possible such exploratory work should be carried outside the Federal Government.

(*d*) A simplified annual input-output table is included in the integrated system of national economic accounts outlined in chapter V (table A–6).

Chapter XIV. National Balance Sheet

1. The Function of Balance Sheets and Their Present Status Within the System of National Accounts

While the United States has had an official annual estimate of national income for a quarter of a century, no steps have yet been taken toward establishing the national balance sheet as a regular feature of our official national economic accounts. This may come as a surprise to businessmen, and even to laymen only vaguely familiar with accounting, since balance sheets and income accounts are usually regarded as the two primary and complementary parts of a system of accounts. Indeed, in the balance-sheet field there has been definite retrogression in marked contrast to the rapid advances made in the last few decades in the national income and product accounts. Up to the 1920's, long before official or unofficial national income estimates became a regular feature, an estimate of national wealth constituted part of our decennial census. It was prepared for the last time for the year 1922.[88] In this field work even outside of the Federal Government is now so rare that we are limited to 1 continuous and reasonably up-to-date set of national wealth estimates and 1 set of national balance sheets for half a dozen benchmark dates since the turn of the century, and both these attempts have become available only recently.[89]

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[88] National Wealth and Income, Federal Trade Commission, 1926.

[89] R. W. Goldsmith, A Study of Saving in the United States, vol. III, pt. I, Princeton University Press, 1956; see also Thirty-Seventh Annual Report of National Bureau of Economic Research, Inc., pp. 34–36.

The economic statistics available to business, government, and academic users have always included many of the building blocks for a national balance sheet and for balance sheets for economic sectors. The tabulation of balance sheets of corporations in Statistics of Income since 1926 probably represents the outstanding example of data usable without or with only minor adjustments in national and sectoral balance sheets. Other examples are the combined balance sheets for the main types of financial institutions—banks, saving and loan associations, and insurance companies; the data on current assets and liabilities of corporations prepared by the Securities Exchange Commission and the Federal Trade Commission; the statistics on the holdings of Treasury securities by different groups of owners; the estimates of holdings of liquid assets by sectors prepared by the Federal Reserve Board; and the balance sheet of agriculture prepared annually by the Department of Agriculture. Among statistics usable less directly in building up national or sectoral balance sheets, mention may be made of the values of owner-occupied homes reported by the census; estate tax returns, and sample information on selected assets and liabilities collected by the Survey of Consumer Finances.

What we have been missing until recently are the systematic collection of these statistics; the provision of estimates for those items in the national and sectoral balance sheets for which no data are as yet available; and the integration of all this material into a framework consistent with regard to delimitation of sectors, definition of assets and liabilities and valuation. Though one attempt to derive such consistent national and sectoral balance sheets has been made, it had in many cases to use very rough estimates in need of considerable refinement, and is waiting to be put on a current basis.[21]

The neglect of the balance-sheet aspect of national accounting is rather striking in view of the many analytical uses to which the figures can be put and of several significant developments in economic theory—such as the accelerator and the Pigou effect—that call for balance-sheet data for verification and concretization. Among the analytically and practically important uses of national or sectoral balance sheets are:

(*a*) Capital-output ratios, which in one form or another have become an important factor in the theoretical treatment and the statistical analysis of economic growth.

(*b*) Debt-equity or debt-asset ratios, helpful in the analysis of financial developments and business cycle.

(*c*) Liquidity ratios (the proportion of assets of different degrees of liquidity to total assets or to certain types of liabilities), which have come to play a considerable role in monetary analysis.

(*d*) Velocities of turnover of different types of assets (figures similar to the well-known velocity of circulation of money, useful in monetary and business-cycle studies.

(*e*) The financial interrelations ratio (the proportion of tangible to intangible assets in the national balance sheet), a measure of the density of financial relations and changes in it, that is of some value as an indicator of balance between the real infrastructure and the financial superstructure of an economy.

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[21] Cf. sec. 3, hereafter.

(*f*) Size distributions of assets and net worth within sectors, particularly household and business, important tools in the analysis of structural changes in the economy and in the evaluation of the social effects of economic growth.

2. CONCEPTS

The concepts of the national balance sheet and the national wealth statement are essentially not more difficult—indeed, they are probably simpler—than those of national income and product. The national balance sheet is the result of adding together the balance sheets of all economic units in the United States—business enterprises, incorporated and unincorporated; households; nonprofit organizations; and governments. Similarly, sectoral balance sheets are the sum of the balance sheets of all units belong to the sector. The national wealth statement and the parallel sectoral wealth statements are best regarded as partial balance sheets limited to tangible assets and, for the Nation, net foreign balance.

The relationship between balance sheets and wealth statements can then be simply expressed in accounting terminology by the statement that the national (or sector) balance sheet is the combined balance sheet of all units in the nation (sector), while the national (sector) wealth statement is their consolidated balance sheet. The difference between the two statements, as is well known, is the treatment of creditor-debtor and stockholder-issuer relationships among units belonging to the same nation (sector). All claims and liabilities arising from these relationships are preserved in the combined national (sector) balance sheet. On the other hand, claims and liabilities, as well as stockholdings and the corresponding figures for stock issued, are eliminated in the consolidated balance sheet, i. e., the wealth statement, because they offset each other and do not represent claims of national (sectoral) units against or liabilities to foreign units. The table following indicates these relationships and lists the main items included in the national (sector) balance sheet and wealth statement.[92]

A. NATIONAL BALANCE SHEET OF UNITED STATES

I. Tangible assets in United States
   1. Reproducible
   2. Nonreproducible
II. Claims against United States debtors
III. Equity securities of United States issuers
IV. Claims against foreign debtors and equities in foreign properties and enterprises
V. National assets
VI. Liabilities to American creditors
VII. Equities of United States issuers held by American owners
VIII. Foreigners' claims against American debtors; foreign holdings of tangible assets in United States and of equities of American issuers
IX. National net worth
X. National liabilities and net worth

[92] This table is intended to bring out the main accounting relationship underlying a national balance sheet and a national wealth statement. It is not an operational document like table A–14 in appendix A, which shows the main rows and columns in a national and sectoral balance sheet.

B. National Wealth Statement of United States

I. Tangible assets in United States
   1. Reproducible
   2. Nonreproducible
II. Net foreign assets (item IV less item VIII of A)
III. National wealth
IV. Net worth
   1. Households
   2. Nonprofit institutions
   3. Government
V. National net worth

Virtually all conceptual and statistical problems that arise in connection with national balance sheets and national wealth statements can be attributed to two problems.

First, national (sector) balance sheets or wealth statements, to make economic sense, must be based on balance sheets of the component units which are uniform with respect to scope and classification of assets and liabilities and to their valuation.

Secondly, a choice must be made among the various theoretical possibilities of valuing assets and liabilities. This choice is much more difficult than in the case of national income and product. The reason is that most of national income and product reflects actual transactions which are entereed into the accounts at the values unequivocally established at the time the transactions occur. There are, of course, exceptions such as imputations and some questions of valuation such as the choice between factor cost and market price, both problems that have been discussed in chapter V. The proportion of transactions for which these problems are important is however much smaller in the national income and product account than in the national balance sheet or the national wealth statement. Obviously in any 1 year only a small fraction of the total stock of assets changes hands permitting a market value to be unequivocally established. Moreover, certain types of assets, particularly large governmental and private structures, virtually never change hands for a measurable monetary consideration. Hence, the value of the stock of tangible and intangible assets cannot in principle be based on actual transactions occurring close to the point in time for which the balance sheet is drawn up. Valuations in the national balance sheet must of necessity be based on other data.

Of the various possible bases of valuation, original cost to the owner, either undepreciated or depreciated—the latter the prevailing usage in business accounting—cannot be used when the figures are intended for certain important types of economic analysis. As a rule, assets are acquired at different times and prices change over time. Mere summation of original cost values found in the balance sheets of different units would often result in an arithmetic aggregate without economic meaning. Similarly, for reasons mentioned above, it is not possible to value all items in the balance sheets of the different units at market value. This cannot be done even if one is willing to apply the valuation of items actually changing hands by analogy to the total stock for those types of assets and liabilities for which an active

market exists, such as is the case for single-family homes, automobiles, and farmland among tangible assets and for corporate and Government securities among intangibles, because virtually no market prices are available for very important classes of assets such as nonresidential private structures, producer durables, in-process inventories, and many assets owned by the Government.

Statisticians will, therefore, be forced to combine different bases of valuation for different types of assets and liabilities, and to use "constructed" values rather than market values for some types of assets. The most important case calling for such constructed values are reproducible tangible assets. These can be valued, if valuation at current prices is desired in order to combine the figures with current values of nonreproducible tangible and intangible assets, by depreciating original cost to the first purchaser within the Nation and then adjusting for price changes between the date expenditures were incurred and the date for which the balance sheet is drawn up—a procedure which admittedly is not entirely satisfactory for all purposes. The same procedure can be used too obtain values for the stock of reproducible tangible assets in constant (base period) prices. In that case, the original cost of the assets is translated from current to constant prices by the use of appropriate price indexes. This is the so-called perpetual inventory method.[83]

National (or sector) balance sheets or wealth statements can then be built up by combining: (*a*) The price adjusted depreciated original cost of reproducible tangible assets with (*b*) the market value of certain types of intangible assets for which an active market exists, and (*c*) the par or face value of other types of intangible assets and of liabilities, particularly for short-term claims.

This is probably the best that can be done to obtain reasonably consistent estimates for national (sector) balance sheets and wealth statements either in current or base-period prices. The latter, parallel to deflated national-product estimates, are essential for economic analysis, where often the influence of price changes must be eliminated in order to bring out economically relevant movements and relationships.

3. STATUS OF WORK

Up to 1922, a national wealth estimate was prepared in increasing detail as a part of the decennial census. After abandonment of official national wealth estimates 2 attempts were made to continue the figures, 1 extending them on an annual basis with some modifications through 1933,[84] and the other providing estimates of the main components of national wealth, also on the annual basis through 1936.[85]

Between the late 1930's and 1950, no estimates of national wealth emanated from either official or unofficial sources. A new set of estimates, based primarily on the perpetual inventory method, which has been available since that date, now covers the period of 1896 to 1949 on an annual basis, distinguishing about 2 dozen different components

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[83] For a description and discussion of this method, see Studies in Income and Wealth, vol. XIV, pp. 7 ff., and R. W. Goldsmith, A Study of Saving, vol. III, table W–7.

[84] A Study of the Physical Assets Sometimes Called Wealth of the United States, 1922–33, Bureau of Economic Research, University of Notre Dame, Ind.

[85] National Industrial Conference Board, Studies in Enterprise and Social Progress, pt. II, 1939.

of national wealth. Estimates are presented on the basis of current prices as well as of base period (1929) prices.[95] This set of estimates is now being revised from the period 1946 on and extended through 1956. It is expected to become available in the near future in the form of an "occasional paper" of the National Bureau of Economic Research.[97]

While the number of national wealth statements that have been prepared officially or privately in foreign countries in the past is extremely numerous—though most of them antedate World War I—there is at present no country that regularly publishes such a statement. A few countries, notably the Netherlands, have at some time during the postwar period issued estimates of national wealth as part of their work on the national accounts, but these statements are available only for one or at most a few dates. The committee has, however, been informed that some countries, particularly the Scandinavian countries, are considering the addition of national wealth statements to their system of national accounts and have done a considerable amount of preparatory work.

In a few countries there are private or semiofficial estimates of national wealth, or at least reproducible wealth, usually on an annual basis. This is the case, for instance, in Great Britain [98] and in Canada.

The International Association for Research in Income Wealth is devoting one of the sessions of its 1957 meeting to the subject of national wealth. It is expected that the papers being prepared in connection with this meeting will include estimates of national wealth, usually along the perpetual inventory method, for about a dozen countries including Canada, the Netherlands, Norway, Western Germany, India, Australia, and Japan. Most of these estimates, however, are expected to refer to only one or a few years during the postwar period.

There never has been an official estimate of the national balance sheet of the United States. Apart from a pioneer attempt referring to the years 1929 and 1936, unofficial estimates are limited to the set published in A Study of Saving, volume III. This set provides rough balance sheets for the years 1900, 1912, 1922, 1929, 1939, 1945, and 1949. It shows figures for 11 sectors and distinguishes 9 types of tangible and 21 of intangible assets and 14 types of liabilities and net worth and is expressed throughout in current values. An extension of these estimates to 1952 and 1955 is in preparation as part of the National Bureau's Postwar Capital Market Study. Preliminary figures for 1955 have just been published and are reproduced in appendix G.

The only official or semiofficial, national balance sheet for a foreign country that has come to attention is a rough estimate for the Netherlands for 1939 and a few postwar years.[99]

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[95] The latest and most detailed published version of these estimates will be found in R. W. Goldsmith, A Study of Saving in the United States, vol. III, pt. I, Princeton University Press, 1956.

[97] For some preliminary results compare 37th Annual Report of the National Bureau of Economic Research, pp. 34–36.

[98] Net Investment in Fixed Assets in the United Kingdom, 1938–53, by Phillip Redfern, Journal of the Royal Statistical Society, vol. 118, pt. 2, 1955.

[99] See J. B. D. Derksen, A System of National Book-Keeping, 1946; Centraal Bureau voor de Statistiek, Statistische en Econometrische Onderzoekingen, IV, 1 (1954).

4. CONNECTION WITH OTHER SEGMENTS OF NATIONAL ACCOUNTS

(a) With national income and product accounts

There is a close connection in business accounting between the income account and the balance sheet by virtue of the fact that saving (undistributed profit), defined as the difference between current income and current expenditure, is equal to the change in earned net worth, and that accumulated saving, capital contributed and realized capital gains and losses are equal to total net worth. This relationship is valid only when, as is generally the case in business accounting, there are no revaluations and no account is taken of unrealized capital gains and losses.

Similarly, in the national balance sheet, national saving is equal to the increase in national net worth, and national accumulated saving is equal to total national net worth at the balance sheet date so long as realized and unrealized capital gains and losses are excluded; i. e., if the balance sheet is drawn up in terms of national original cost. Thus, national net worth in original cost is equal to national saving summed over time.

The same relationships hold—and this is relevant in connection with the treatment of capital consumption allowances discussed in chapter VII, section 1 a—if realized and unrealized capital gains or losses are taken into account. In that case such revaluations must, however, be regarded as constituting part of current income and hence of saving. This calculation, of course, can be carried out only in current monetary values and is not directly available for translation into constant prices, hence the question of shifting from original to replacement cost depreciation does not arise. Under this approach, the following relations obtain:

Change in current value of assets minus change in current value of liabilities equals—

Change in current value of net worth.

Change in earned surplus plus net revaluation.

Gross income minus original cost depreciation minus dividend payments plus capital contributed plus net revaluation.

Estimates along these lines, while of substantial interest for studying changes in the distribution of wealth, are probably too unfamiliar and have to rest in part on too speculative calculations to be recommended as part of the official national accounts.

(b) With moneyflow accounts

The moneyflow estimates of both Professor Copeland and of the Federal Reserve Board include partial national and sector balance sheets as they carry information on the amount of claims of different type held by each sector and on the amounts of liabilities owned by them. The moneyflow studies thus lack on the asset side figures for the stock of tangible assets and for holdings of corporate stock, and on the other side data on corporate stock issued and net worth for complete sectoral or national balance sheets.

(c) With input-output statements

The input-output statements for the United States that have been published, i. e., that of Professor Leontief for the years 1919, 1929,

and 1939 and that of Bureau of Labor Statistics for the year 1947,[1] have no specific connection with balance sheets or wealth statements. In all these cases, the square matrixes that constitute the core of the input-output studies, are limited to flows between sectors during one year and make no distinction between current flows and flows on capital account. Hence, while the matrixes indicate the amounts of goods and services that are supplied in the given period by each of the different sectors distinguished to produce each dollar or unit output in every sector, they give no indication of the stocks of durable goods and inventories, or of the amounts of fixed assets acquired during the period, that are associated with each dollar, or unit, of output.

Attempts have recently been made to include in the input-output matrixes the requirements for capital goods and inventories per monetary or physical unit of output of the different sectors.[2] It is too early to say whether these attempts, which involve the introduction of something like capital-output ratios into them, will be successful and will become a regular feature of future matrixes. If this should be the case, a fairly close relation, of course, would be established between input-output studies and balance sheets and wealth statements, and it might be expected that the more detailed work on capital stock and capital expenditures of individual industries that would have to accompany this working out of input-output matrixes would produce information available for a finer industrial breakdown of the estimates of tangible assets in the national balance sheets and wealth statements.

5. RECOMMENDATIONS

At the present time, the main gaps in the information available for national balance sheet estimates may be summarized as follows, assuming that what is desired is a reasonably detailed and reliable statement for the same sectors which are being considered separately for the national income and product accounts.

(*a*) Absence of census-type figures for the value of all residential real estate, or at least for single family homes, that can be used as a check against the perpetual inventory figures. At present such figures are provided by the census of housing only for owner-occupied homes and the figures are available for no later date than 1950.

(*b*) Lack of any benchmark for the current value of nonresidential real estate. A study now underway at the Bureau of the Census, which tries to divide assessed valuations by type of property and attempts to establish from independent data typical relationships between market and assessed values will constitute a first step in this direction.

(*c*) Absence of information on the distribution of ownership of nonresidential real estate among the different sectors, particularly as between corporations, unincorporated business and nonprofit institutions. While such data are not required for a national balance sheet or wealth statement they are essential for sectoral balance sheets.

(*d*) Insufficient information on actual lives of structures and of producer durables. The absence of these data makes the perpetual in-

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[1] These documents have been discussed in some detail in ch. XIII.

[2] See, e. g., R. N. Grosse, The Structure of Capital in Studies in the Structure of the American Economy, Theoretical and Empirical Explorations in Input-Output Analysis, edited by W. Leontief, Oxford University Press, 1953.

ventory estimates which are derived from the cumulation of depreciated original capital expenditures on the basis of assumed lives, usually taken from bulletin F of the Internal Revenue Service, last revised more than a decade ago, rather precarious.

(*e*) Lack of comprehensive estimates of the current market value of known or presumed subsoil assets and of forest land.

(*f*) Absence of a benchmark for the value of Government structures and, less serious, producer durables and equipment owned by the Government. An important step to remedy this deficiency is now being taken by the Committee on Government Operations, but the day when comprehensive and consistent valuations of all assets of the Federal Government will be available still seems to be several years off.[3]

(*g*) Estimate of market value of foreign investments. At the present time only book values are available in the case of direct investments and they necessarily often differ considerably from current valuations.

(*h*) Absence of any consistent and comprehensive information on the value of tangible assets of State and local governments.

(*i*) Lack of a comprehensive and consistent balance sheet for unincorporated business enterprises. At the present time practically the only available data are limited to the tabulations of balance sheets of partnerships submitted with their tax returns which is now being undertaken on a biannual basis by the Internal Revenue Service. The scarcity of reliable information on the different items of assets and liabilities of unincorporated business is probably the most important single factor preventing a considerable improvement in the quality of our national balance sheet.

As practically every item in the rough national wealth statement and balance sheet that is now available is susceptible to improvement and most of the important gaps in information have just been listed, there is not much point in making specific recommendations. What is possibly appropriate is an expression of the committee's views regarding work in this field over the next few years.

The committee feels that as part of a long-range program of improvement and expansion of our system of national accounts the development of comprehensive and consistent national and sectoral balance sheets on a regular periodic (if possible annual) basis should be taken in hand as soon as feasible.

The committee, however, recognizes that there are still so many unresolved conceptual problems in this field and that the estimates are in many cases necessarily still so rough that the next step should not be the immediate attempt by a Government agency to develop balance sheets or even national wealth statements. It seems to the committee that this is the field for a thorough study, exploratory and experimental in part, possibly by one of our private research institutions. Such a study would probably require an intensive effort over several years. It might be expected to result in, first, the development of superior methods of estimation and in improved actual estimates for many types of assets and liabilities; and, secondly, in a concrete plan for the collection of data in fields where only a Government agency is likely to secure the necessary information. After such a preparatory study the time will probably have arrived for one of the statis-

[3] See discussion in ch. VII, sec. 3.

tical agencies of the Federal Government to take over the preparation of periodic national and sectoral balance sheets as a regular feature, integrated, of course, with other parts of the national accounts.

Work on this broader and more intensive project, however, should not interfere with the development by the National Income Division of their rough estimates of the value of some components of the stock of durable reproducible assets, particularly those components that are necessary for introducing depreciation allowances into the national accounts (e. g., Government structures and consumer durables) or providing alternative depreciation allowances on a replacement cost basis (private structures and producer durables).

Chapter XV. The Challenge of Electronic Accounting

The committee has not made more than a cursory inquiry into the potentialities that electronic accounting holds for the national accounts as for many other fields of economic statistics. This neglect does not mean that in the committee's view the introduction on a large scale of electronic accounting in business and government, which may be expected to take place over the next 5 to 10 years, though it may take decades to be developed fully, does not have very important implications for national accounting. Quite on the contrary, the challenges and the promise of electronic accounting for the national accounts are so great that only a group of experts concentrating their attention on this field can, the committee believes, do justice to the problem.

The committee, however, feels justified in making two observations. First, once electronic accounting is adopted by a substantial proportion of large business and governmental organizations—and by means of service contracts possibly also by medium-sized business enterprises—it will become possible to obtain certain types of economic information crucial for the national accounts, as well as for other purposes, with a speed and in detail difficult to visualize under present methods. This applies, in the national accounting field, primarily to data on purchases, sales, inventories, payrolls, capital expenditures, and liquid assets. The speedup of the data, reducing the lag of their availability behind the close of the accounting period to not more than a few days, will be of particular importance for national accounts for quarters and shorter periods. The availability of additional detail in the form of classifications of transactions by commodity and by type and location of buyer and seller, will also be very important in improving the annual national accounts and in developing regional accounts.

Secondly, many of the potentialities of electronic accounting for the national accounts will be realized only if thought is given soon to how best to take advantage of the new data-processing equipment. This involves matters such as the inclusion in the electronic accounting system of items of special interest for the national accounts and uniformity in coding (or at least arrangements under which codes used by

different systems of electronic accounting or by different enterprises can be translated into each other).[4]

The internal recordkeeping of business and government organizations with few exceptions—such as the census statistics—will always remain the main justification for the introduction and development of electronic accounting systems. What is needed is so to arrange matters that the statistics for the national accounts and other statistical programs are furnished as far as possible as a byproduct of these normal bookkeeping processes. For this reason the committee hopes and urges that an intensive study of the impact of electronic accounting on the national accounts and of the fitting of national accounting data into the developing electronic accounting systems will be started as soon as possible. This should be a cooperative undertaking of imaginative economists, statisticians, accountants, management experts, and electronic engineers. The problem of standardization of equipment, procedures, and codes will probably be high on the agenda of such a group study.

[4] One example will illustrate what is meant. There is a fair chance that within a few years a substantial proportion of all large banks will handle their checks by electronic accounting. This will involve assigning a code number to each account, the number probably to be imprinted in magnetic ink on all checks so that it can be read automatically into the tapes which form the basis of the electronic accounting system. If banks can be induced to add a one digit code to the account number thus classifying depositors into broad groups—corresponding to sectors in the national accounting system such as households, farmers, corporations, and unincorporated business enterprises, nonprofit institutions, government, and foreigners—it will be possible to produce very promptly, at very moderate additional cost to the banks, detailed monthly or even weekly statistics of balances, debits, and credits which will be of great value not only for the national accounts but for many other fields of monetary and economic analysis and policy.

APPENDIXES

APPENDIX A

Illustrative Tables for System of National Accounts

(Ch. V)

The actual data in tables A–1 through A–5 are the National Income Division's estimates for 1953.

As indicated in chapter V of the report the exact arrangement of the tables, particularly the number and content of columns and rows, is tentative and is not to be regarded as a specific recommendation by the committee.

Table A–1.—*Gross national income and product account for the United States, 1953*

[In billions]

1. Payments by producing units to individuals	$277.5
(a) Compensation of employees	209.1
(1) Enterprise employees	177.7
(2) Government employees	31.4
(b) Interest	13.5
(c) Dividends	9.4
(d) Entrepreneurial income	44.6
(1) Farm income	12.2
(2) Rental income	10.6
(3) Professional income	21.8
(4) Other income of unincorporated enterprises	
(a) Stated value	26.4
(b) Inventory and depreciation valuation adjustment [1]	−4.6
(e) Business transfer payments	1.0
2. Income retained by producing units	39.5
(a) Capital consumption	36.8
(1) Depreciation	27.2
(a) Private enterprises	27.2
(b) Public enterprises	.0
(2) Depreciation valuation adjustment [1]	9.6
(b) Retained earnings	2.7
(1) Undistributed profits [2]	8.9
(2) Inventory and depreciation valuation adjustment [1]	−6.2
3. Tax and income payments by producing to Government	54.4
(a) Corporate profits tax	21.1
(b) Property taxes	9.1
(c) Commodity and transaction taxes	16.9
(d) Licenses, fees, and other business taxes	4.1
(e) Interest and dividends received by Government	2.4
(f) Current surplus of Government enterprises	.8
4. Minus subsidies and Government interest	7.6
(a) Subsidies	.2
(b) Government interest	7.4
5. Statistical discrepancy	1.0
Gross national income	364.9

[1] Adjustment for capital gain or loss on valuation of inventories and/or depreciation.
[2] Total corporate profits before tax (sum of 1 (c), 2 (b), and 3 (a)), 39.6.

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TABLE A–1.—*Gross national income and product account for the United States, 1953*—Continued

(In billions)

6. Consumers' expenditures on goods and services	$229.6
(*a*) Food	77.2
(*b*) Clothing	24.6
(*c*) Other	127.8
7. Government expenditures on goods and services	77.2
(*a*) Services	31.4
(*b*) Goods	45.8
8. Gross expenditures on producers' durable goods	51.6
(*a*) Private enterprises	49.9
(1) Construction	25.5
(2) Equipment	24.4
(*b*) Public enterprises	1.7
(1) Federal	.2
(2) State and local	1.5
9. Net change in producing units' inventories	1.5
10. Exports	21.3
(*a*) Merchandise	16.5
(*b*) Shipping, tourism, etc	2.9
(*c*) Labor and property income	1.9
	421.2
11. Minus imports	16.4
(*a*) Merchandise	11.0
(*b*) Shipping, tourism, etc	5.0
(*c*) Labor and property income	.5
Gross national product	384.9

TABLE A–2.—*Personal income and outlay account for the United States, 1953*

[In billions]

1. Consumers' expenditures on goods and services	$229.6
(*a*) Food	77.2
(*b*) Clothing	24.6
(*c*) Other	127.8
2. Tax payments by individuals	44.6
(*a*) Income taxes	32.5
(*b*) Total social insurance contributions	8.7
(*c*) Fees, fines, personal property, and other taxes	3.4
3. Transfer payments by individuals to abroad	.5
4. Personal saving	15.6
Personal outlay and saving	290.3
5. Payments by producing units to individuals	277.5
(*a*) Compensation of employees	209.1
(1) Enterprise employees	177.7
(2) Government employees	31.4
(*b*) Interest	18.6
(*c*) Dividends	9.4
(*d*) Entrepreneurial income	44.6
(1) Farm income	12.2
(2) Rental income	10.6
(3) Professional income (4) Other income of unincorporated enterprises	21.8
(*a*) Stated value	26.4
(*b*) Inventory and depreciation valuation adjustment [1]	—4.6
(*e*) Business transfer payments	1.0
6. Transfer payments by Government to individuals	12.8
7. Transfer payments from abroad to individuals	0
Personal income	290.3

[1] Adjustment for capital gain or loss on valuation of inventories and/or depreciation.

TABLE A–3.—*Government receipts and outlay account for the United States, 1953*

[In billions]

1. Government expenditures on goods and services	$77.2
(a) Services	31.4
(b) Goods	45.8
2. Subsidies and Government interest	7.6
(a) Subsidies	.2
(b) Government interest	7.4
3. Transfer payments by Government to individuals	12.8
4. Transfer payments by Government to abroad	6.3
5. Government surplus	—4.8
Government outlay and surplus	99.1
6. Tax and income payments by producing units to Government	54.4
(a) Corporate profits tax	21.1
(b) Property taxes	9.1
(c) Commodity and transactions taxes	16.9
(d) Licenses, fees, and other business taxes	4.1
(e) Interest and dividends received by Government	2.4
(f) Current surplus of Government enterprises	.8
7. Tax payments by individuals	44.6
(a) Income taxes	32.5
(b) Total social insurance contributions	8.7
(c) Fees, fines, personal property, and other taxes	3.4
8. Transfer payments to Government from abroad	.1
Government receipts	99.1

TABLE A–4.—*Foreign trade and payments account for the United States, 1953*

[In billions]

1. Exports	$21.8
(a) Merchandise	16.5
(b) Shipping, tourism, etc	2.9
(c) Labor and property income	1.9
2. Transfer payments to individuals from abroad	0
3. Transfer payments to Government from abroad	.1
4. Net borrowing from abroad	1.9
Receipts from abroad	23.2
5. Imports	16.4
(a) Merchandise	11.0
(b) Shipping, tourism, etc	5.0
(c) Labor and property income	.5
6. Transfer payments from individuals to abroad	.5
7. Transfer payments from Government to abroad	6.3
Payments to abroad	23.2

TABLE A–5.—*Gross saving and investment account for the United States, 1953*

[In billions]

1. Gross expenditures on producers' durables	$51.6
(a) Private enterprises	49.9
(1) Construction	25.5
(2) Equipment	24.4
(b) Public enterprises	1.7
(1) Federal	.2
(2) State and local	1.5
2. Net change in producing units' inventories	1.5
Gross domestic investment	53.1
3. Personal saving	15.6

TABLE A–5.—*Gross saving and investment account for the United States, 1953*—Continued

[In billions]

4. Income retained by producing units	$39.5
(a) Capital consumption	36.8
(1) Depreciation	27.2
(a) Private enterprises	27.2
(b) Public enterprises	0
(2) Depreciation revaluation adjustment [1]	9.6
(b) Retained earnings	2.7
(1) Undistributed profits	8.9
(2) Inventory and depreciation valuation adjustments [1]	−6.2
5. Government surplus	−4.8
6. Net borrowing from abroad	1.9
7. Statistical discrepancy	1.0
Gross saving	53.1

[1] Adjustment for capital gain or loss on valuation of inventories and/or depreciation.

TABLE A–6.—*Value of product by industrial sectors*

Payments to / Receipts from	A. Total, all products	1. Agriculture	2. Mining	3. Contract construction	4. Manufacturing	5. Wholesale and retail trade	6. Finance, real estate, and insurance	7. Transportation	8. Communications and public utilities	9. Services	10. Government	11. Foreign countries	B. Private consumers	C. Government	D. Producers' durable goods	E. Inventories	F. Exports	Total value of product	Total available for industries (B–F)
I. Purchases from producing units																			
(a) Agriculture																			
(b) Mining																			
(c) Contract construction																			
(d) Manufacturing																			
(e) Wholesale and retail trade																			
(f) Finance, insurance, real estate																			
(g) Transportation																			
(h) Communications and public utilities																			
(i) Services																			
(j) Government																			
(k) Foreign countries																			
II. Payments by producing units to individuals																			
(a) Compensation of employees																			
(b) Interest																			
(c) Dividends																			
(d) Entrepreneurial income																			
(e) Business transfer payments																			
III. Income retained by producing units																			
(a) Capital consumption																			
(b) Retained earnings																			
IV. Payments by producing units to Government																			
(a) Corporate profits tax																			
(b) Property taxes																			
(c) Commodity and transportation taxes																			
(d) Licenses, fees, and other																			
(e) Interest and dividends																			
(f) Current surplus of Government enterprises																			
V. Imports																			
VI. Adjustments																			
(a) Subsidies																			
(b) Government interest																			
VII. Statistical discrepancy																			
Total value of product																			
Total availabilities (II–VII for industries 1–11)																			
Gross national income and income originating by industry (II–IV and VI–VII for industries 1–11)																			

TABLE A-7.—*Value of product by institutional sectors*

Receipts from / Payments to	A. Total, all producing units	1. Corporations	2. Nonfarm noncorporate enterprises	3. Farm enterprises	4. Federal Government	5. State and local government	6. Government enterprises	7. Banking	8. Insurance	9. Other investors	10. Nonprofit institutions	11. Foreign countries	A. Private consumers	C. Governments	D. Producers' durable goods	E. Inventories	F. Exports	Total value of product	Total available (H–F for row 1)
I. Purchases from producing units																			
II. Payments by producing units to individuals																			
(a) Compensation of employees																			
(b) Interest																			
(c) Dividends																			
(d) Entrepreneurial income																			
(e) Business transfer payments																			
III. Income retained by producing units																			
(a) Capital consumption																			
(b) Retained earnings																			
IV. Payments by producing units to Government																			
(a) Corporate profits tax																			
(b) Property taxes																			
(c) Commodity and transportation taxes																			
(d) Licenses, fees, and other																			
(e) Interest and dividends																			
(f) Current surplus of Government enterprises																			
V. Imports																			
VI. Adjustments																			
(a) Subsidies																			
(b) Government interest																			
VII. Statistical discrepancy																			
Total value of product																			
Total availabilities (II–VII for industries 1–11)																			
Gross national income and income originating by industry (III–V and VI–VII for industries 1–11)																			

TABLE A–8.—*Personal income account by institutional sectors*

	Nonprofit institutions	Farm families	Entrepreneurial nonfarm families	Other	Total
RECEIPTS					
1. Payments by producing units to individuals					
(a) Compensation of employees					
(b) Interest and dividends					
(c) Entrepreneurial income					
(d) Business transfer payments					
2. Transfer payments by Government					
3. Transfer payments from abroad					
4. Transfer payments from private consumption sectors					
Total receipts					
OUTLAYS					
1. Consumers' expenditures on goods and services					
(a) Food					
(b) Clothing					
(c) Other					
2. Tax payments by individuals					
(a) Income taxes					
(b) Total social insurance contributions					
(c) Fees, personal property taxes, etc.					
3. Transfer payments to abroad					
4. Transfer payments to private consumption sectors					
5. Personal saving or surplus					
Total outlay and saving					

TABLE A–9.—*Government receipts and outlays*

	Federal [1]	State [1]	Local [1]	Total [1]
RECEIPTS				
1. Tax and income payments by producing units				
(a) Corporate profits tax				
(b) Property taxes				
(c) Commodity and transactions taxes				
(d) Licenses, fees, etc.				
(e) Interest and dividends				
(f) Current surplus of Government enterprises				
2. Tax payments by individuals				
(a) Income taxes				
(b) Total social insurance contributions				
(c) Fees, personal property taxes, etc.				
3. Transfer payments from abroad				
4. Intragovernmental transfer payments				
Total receipts				
OUTLAYS				
1. Government expenditures on goods and services				
(a) Goods				
(b) Services				
2. Subsidies and Government interest				
(a) Subsidies				
(b) Government interest				
3. Transfer payments to individuals				
4. Transfer payments to abroad				
5. Intragovernmental transfer payments				
6. Government surplus				
Total outlays and surplus				

[1] To be subdivided into: (*a*) General government; (*b*) Government trust, pension, etc., funds.

TABLE A–10.—*International current payments by country and commodity*

Item \ Country	Argentina	Australia				Venezuela	Yugoslavia	Total
Exports of merchandise:								
0 Food								
1 Beverages and tobacco								
2 Crude materials, inedible, except fuels								
3 Mineral fuels, lubricants, and related materials								
4 Animal and vegetable oils and fats								
5 Chemicals								
6 Manufactured goods classified chiefly by material								
7 Machinery and transport equipment								
8 Miscellaneous manufactured articles								
9 Miscellaneous transactions and commodities, n. e. s.								
Shipping and tourism receipts								
Property income received								
Transfer payments to individuals								
Transfer payments to Government								
Net borrowing from abroad								
Total receipts from abroad								
Imports of merchandise:								
0 Food								
1 Beverages and tobacco								
2 Crude materials, inedible, except fuels								
3 Mineral fuels, lubricants, and related materials								
4 Animal and vegetable oils and fats								
5 Chemicals								
6 Manufactured goods classified chiefly by material								
7 Machinery and transport equipment								
8 Miscellaneous manufactured articles								
9 Miscellaneous transactions and commodities, n. e. s.								
Shipping and tourism payments								
Property income paid								
Transfer payments from individuals								
Transfer payments from Government								
Total payments to abroad								

TABLE A–11.—*Saving and investment by industrial sector*

Object of expenditure / Purchasing sector	A. Total, all producing units	1. Agriculture	2. Mining	3. Contract construction	4. Manufacturing	5. Wholesale and retail trade	6. Finance, insurance, and real estate	7. Transportation	8. Communications and public utilities	9. Services	10. Government	11. Foreign countries	B. Private consumers	C. Governments	Total
Total equipment:															
Furniture and fixtures															
Cutlery and hand tools															
Fabricated metal products															
Engines and turbines															
Agricultural machinery															
Construction machinery															
Mining and oilfield machinery															
Metalworking machinery															
Office and store machinery															
Service industry and household machines															
Electrical machinery															
Trucks, buses, and trailers															
Passenger cars															
Aircraft															
Ships and boats															
Railroad equipment															
Instruments															
Total construction															
Residential buildings															
Industrial buildings															
Public utility construction															
Farm construction															
Highways															
Military facilities															
Sewer and water construction															
Conservation and development															
Change in inventories:															
Existing assets															
Purchases															
Sales (deduct)															
Total investment															
Saving and net borrowing															
Realized capital gains															
Income retained															
Depreciation															
Inventory and depreciation valuation and adjustment [1]															
Undistributed profits															
Net borrowing (residual)															
Total saving and net borrowing															

[1] Adjustment for capital gain and loss on valuation of inventories and for depreciation.

TABLE A–12.—*Stock of reproducible goods by industrial sector*

Object \ Owning sector	A. Total, all producing units	1. Agriculture	2. Mining	3. Contract construction	4. Manufacturing	5. Wholesale and retail trade	6. Finance, insurance, and real estate	7. Transportation	8. Communications and public utilities	9. Services	10. Government	11. Foreign countries	B. Private nonprofit	C. Governments	Total
Total equipment: [1]															
Furniture and fixtures															
Fabricated metal products															
Engines and turbines															
Agricultural machinery															
Construction machinery															
Mining and oil-field machinery															
Metalworking machinery															
Office and store machines															
Service industry and household machines															
Electrical machinery															
Trucks, buses, and trailers															
Passenger cars															
Aircraft															
Ships and boats															
Railroad equipment															
Instruments															
Total structures															
Residential buildings															
Industrial buildings															
Public utility construction															
Farm construction															
Military facilities															
Highways															
Sewer and water construction															
Conservation and development															
Inventories															
Total reproducible goods															
Accumulated income retained and borrowing:															
Income retained															
Realized capital gains															
Borrowing															
Valuation adjustment for unrealized capital gains															
Total accumulated income retained and borrowing															

[1] Valued at market prices. Difference between market price and historical cost equals unrealized capital gains.

TABLE A–13.—*Changes in assets and liabilities by institutional sector*

Item \ Sector	A. Total, all producing units	1. Corporations	2. Nonfarm noncorporate enterprises	3. Farm enterprises	4. Federal Government	5. State and local government	6. Government enterprises	7. Banking	8. Insurance	9. Other investors	10. Nonprofit institutions	11. Foreign countries	B. Other consumers	Total
Assets:														
Gold														
Currency and deposits														
Loans														
Mortgages [1]														
Other														
Securities [1]														
Federal														
State and local														
Corporate														
Other														
New equipment														
New construction														
Net purchases of existing assets														
Equipment [1]														
Structures [1]														
Land [1]														
Other assets [1]														
Total assets														
Liabilities and equities:														
Currency and deposits														
Notes and accounts payable														
Mortgages [1]														
Bonds [1]														
Other liabilities														
Corporate stock [1 2]														
Income retained														
Depreciation														
Inventory and depreciation valuation adjustment [3]														
Undistributed profits and saving														
Capital gain														
Total liabilities and equity														

[1] These items should be on a gross basis, showing separately acquisitions and dispositions (incurrences and repayment of debt for liabilities).
[2] Refers to actual receipts from sale (or cost of repurchase) of issuer's own stock.
[3] Adjustment for capital gain or loss on valuation of inventories and/or depreciation.

TABLE A–14.—*Assets and liabilities by institutional sector*

Item \ Sector	A. Total, all producing units	1. Corporations	2. Nonfarm noncorporate enterprises	3. Farm enterprises	4. Federal Government	5. State and local government	6. Government enterprises	7. Banking	8. Insurance	9. Other investors	10. Nonprofit institutions	11. Foreign countries	B. Other consumers	Total
Assets:														
Gold														
Currency and deposits														
Loans														
Mortgages [1]														
Other														
Securities [1]														
Federal														
State and local														
Corporate														
Other														
Equipment [1]														
Structures [1]														
Land [1]														
Other assets [1]														
Total assets														
Liabilities and equities:														
Currency and deposits														
Notes and accounts payable														
Mortgages [1]														
Bonds [1]														
Other liabilities														
Corporate stock [1]														
Earned income retained														
Realized capital gains														
Unrealized capital gains on revaluation of assets and liabilities														
Total liabilities and equity														

[1] These items should be shown at market value. However, original cost and the valuation adjustment should also be shown, and in the case of equipment and structures both depreciation and the depreciation valuation adjustment should be indicated.

APPENDIX B

ILLUSTRATIVE QUARTERLY INCOME AND PRODUCT TABLES (CH. VIII)

As indicated in chapter VIII of the report, the exact arrangement of the tables is tentative and is not to be regarded as a specific recommendation by the committee.

TABLE B–1.—*Gross national product or expenditure* [1]

Gross national product
Personal-consumption expenditures:
- Durable goods:
  - Autos and parts
  - Furniture and household equipment
- Nondurable goods:
  - Clothing and shoes
  - Food and alcoholic beverages
  - Gasoline and oil
- Services:
  - Household operation
  - Housing
  - Transportation

[1] Total includes items not shown separately.

TABLE B–1.—*Gross national product or expenditure*—Continued

Gross private domestic investment:
- New construction:
  - Residential nonfarm
  - Industrial (including warehouse, office, utility)
  - Farm, commercial, nonprofit, other
- Producers' durable equipment:
  - Commodity producing and packaging
  - Autos and trucks
  - Other transportation and construction equipment
  - Power generating, transmission, and communication
  - Farm, commercial, other
- Change in business inventory:
  - Farm
  - Nonfarm

Government purchases of goods and services:
- Federal, total
- National security, total:
  - Construction
  - Equipment
  - Services
- Civilian, total:
  - Construction
  - Equipment
  - Services
- Less government sales
- State and local, total:
  - Construction
  - Equipment
  - Services

Net foreign balance on current account:
- Merchandise trade:
  - Exports
  - Imports
- Services and property income:
  - Receipts
  - Payments

TABLE B–2.—*Income and product relations*

Gross national product
Less:
- Capital-consumption allowances
- Indirect business taxes
- Business transfer payments
- Surplus of government enterprises
- Statistical discrepancy

Plus: Subsidies
Equals: National income
Less:
- Corporate profits and inventory and depreciation valuation adjustment
- Contributions for social insurance:
  - Employer
  - Employee
- Excess of wage accruals over disbursements

Plus:
- Government transfer payments
- Net interest paid by Government
- Dividends
- Business transfer payments

TABLE B–2.—*Income and product relations*—Continued

Equals: Personal income
Composition of personal income:
- Wage and salary disbursements, total (net of social-security contribution):
  - Commodity-producing industries
  - Distributive industries
  - Service industries
  - Government
- Other labor income
- Proprietors and rental income (net of social-security contribution and inventory valuation adjustment):
  - Business and professional
  - Farm
  - Rental income of persons
- Personal interest income and dividends
- Transfer payments

TABLE B–3.—*Allocation of available funds*

Disposition of personal income
Total personal income
Less:
- Personal tax and nontax payments:
  - Federal
  - State and local

Equals: Disposable personal income
Less:
- Personal-consumption expenditures
- Net transfers to abroad

Equals: Personal saving
Disposition of corporate funds
Corporate profits and inventory and depreciation valuation adjustment
Less: Inventory and depreciation valuation adjustment
Equals: Corporate profits before tax
Less: Corporate profits tax liability
Equals: Corporate profits after tax
Less:
- Changes in book value of corporate inventories
- Dividends

Equals: Net corporate saving
Plus: Corporate capital-consumption allowances
Equals: Gross corporate saving
Federal Government transactions on income and product account
Receipts:
- Individual income tax
- Corporate income tax
- Excise taxes
- Other receipts

Less expenditures:
- Purchases of goods and services
- Subsidies and net interest
- Net capital transfers to Government enterprises
- Transfer payments to individuals
- Net transfers to abroad

Equals: Government surplus or deficit

APPENDIX C

Replies to Questionnaires

Table C–1.—*Tabulation of replies to general questionnaire (Q8)*

Number of replies, 61.[1] For each group of 4 columns, the difference between the sum of the entries and 61 is the number who responded with a comment or question.

No.	Question	(1) Past need				(2) Future desirability				(3) Frequency (timing)			
		N	O	F	No answer	N	O	F	No answer	A	Q	A and Q	No answer
1 (a)	Inventory consumer durables	7	28	17	12	4	27	22	8	21	8	20	12
(b)	Allocated between consumption and business expense	9	25	15	12	6	27	18	10	20	4	20	17
(c)	Imputations	8	24	8	21	5	24	10	22	20	6	8	26
2 (a)	Producer durables by type of commodity	8	23	16	13	7	28	15	10	16	7	14	30
(b)	Producer durables by purchasing industry	12	20	16	14	11	26	15	10	12	5	20	23
(c)	Change in inventory by industry	10	15	11	25	18	10	13	20	3	3	18	33
(d) i	Depreciation estimates replacement cost	11	18	16	17	8	21	17	15	23	5	8	26
ii	Depreciation estimates declining balance	11	12	4	34	8	14	6	33	16	3	7	34
3 (a)	Reconciliation Government account with conventional and cash budget	6	21	22	12	4	27	23	8	20	4	9	28
(b)	Government purchases on current and capital account	6	27	19	10	3	32	23	7	23	7	13	12
(c)	Government current expenditures, by type	8	1	11	41	8	1	11	41	6	1	5	30
4 (a)	Separate households	4	20	22	15	2	21	24	14	26	6	14	15
(b)	Separate income and expenditure for other groups	8	4	3	46	5	6	4	46	5	1	4	51
5 (a)	Personal savings, quarterly estimate by balance-sheet method	8	19	19	14	6	23	19	13				
(b)	Separate information for transactors in personal saving	9	11	17	22	6	11	20	24	9	8	9	34
6	Monthly gross national product and components	15	8	17	20	15	8	23	17				
7 (a)	Gross national product and principal components, quarterly in constant dollars	8	17	23	16	5	16	27	11				
(b)	Personal income in constant dollars	6	17	19	26	6	16	22	17	3	12	17	28
(c)	Components of personal consumption in constant dollars	7	12	16	27	8	12	17	23	12	5	11	34
(d)	National income by industry of origin in constant dollars	18	12	10	20	17	13	12	18	11	6	6	38
8 (a)	Federal Reserve bank money-flow accounts, quarterly	17	13	13	18	12	16	16	17				
(b)	Regular estimates of input-output	18	14	6	23	15	17	16	18	14	2	3	40
(c)	Regular estimates of balance sheet	12	22	9	17	10	24	13	23	22	3	4	30
(d)	Regular reconciliation of systems	11	18	10	21	9	19	13	19	17	2	4	36
9	Unadjusted quarterly estimates	14	16	14	17	13	16	14	18				

[1] See exhibit C-1.

Note.—N—Not at all; O—Occasionally; F—Frequently; A—Annually; Q—Quarterly.

TABLE C–1.—*Tabulation of replies to general questionnaire* (Q2)—Continued

	Yes		No		No answer
	Unqualified	With comment	Unqualified	With comment	
14. Do you have substantial need for national income and product figures back of 1929 that tie in with those available for the period beginning 1929?	18	12	20	1	18
15. Are the descriptions of the sources and methods of estimation of the national income accounts (particularly those in pt. III of National Income, 1954 edition) sufficiently concrete and detailed for your purposes with respect to:					
Annual estimates	37	2	3	1	17
Quarterly estimates	34	3	1	2	19
16. Are the discussions of concepts (particularly in pt. II of National Income, 1954 edition) satisfactory?	29	4	4	2	23

TABLE C–2.—*Tabulation replies to regional questionnaire (Q3)*

Number of replies 26.[1] For each group of 4 columns, the difference between the sum of the entries and 26 is the number who responded with a comment or question.

No.	Question	(1) Past need				(2) Future desirability			
		N	O	F	No answer	N	O	F	No answer
1	Estimate of total disposable income by State	2	8	14	0	1	9	14	1
2	Partial or total breakdown of State personal income by size of income	6	13	5	1	5	13	5	1
3	Estimate of gross State expenditure	7	7	12	0	3	10	12	1
4	Estimate State personal income—constant prices	9	11	4	1	4	14	8	1
5	Quarterly estimate State personal income	9	7	7	3	5	7	10	3
6	Regional input-output matrixes	11	10	2	2	6	15	2	2
7	Estimate personal income for counties	2	9	13	2	2	7	15	2
8	Estimate personal income for metropolitan areas	1	8	14	2	1	8	14	2
9	Breakdown income paid by establishments producing for national or international markets	8	12	4	3	7	11	5	3

[1] See exhibit C

NOTE.—N—Not at all; O—Occasionally; F—Frequently; A—Annually; Q—Quarterly.

EXHIBIT C–1.—*Respondents to general questionnaire (Q2)*

Name and organization

William I. Abraham, Statistical Office, United Nations
Thomas R. Atkinson, Federal Reserve Bank of Atlanta
Solomon Barkin, Textile Workers Union of America
Harold Barger, National Bureau of Economic Research
Ralph H. Bergmann, United Rubber, Cork, Linoleum and Plastic Workers of America
Abram Bergson, Harvard University
William A. Berridge, Metropolitan Life Insurance Co.
S. K. Botsford, Standard Oil Company of Indiana
Dean Bowman, Crown Zellerbach Co.
Charles T. Broderick, The Lehman Corp.
Otis Brubaker, United Steelworkers of America
Edward Budd, Yale University
Jacob Cohen, Bowling Green State University
Miles L. Colean, consultant
William Cooper, Carnegie Institute of Technology
Morris Copeland, Cornell University
Andrew Court, General Motors Corp.
Daniel Creamer, Interdepartmental Committee on Low Incomes
Leonard Crum, University of California
John C. Dawson, Brookings Institution
George Garvy, Federal Reserve Bank of New York
Woodrow L. Ginsburg, United Automobile, Aircraft, and Agricultural Implement Workers of America
Nathan Goldfinger, AFL–CIO
Everett Hagen, Massachusetts Institute of Technology
George P. Hitchings, Ford Motor Co.
Edgar M. Hoover, Harvard University
Arno Johnson, J. Walter Thompson Co.
Francis C. Jones, Green Giant Co.
Lester S. Kellogg, Deere & Co.
Edmund R. King, Eastman Kodak Co.
Irving B. Kravis, Wharton School of Finance and Commerce
David Lasser, Electrical, Radio, and Machine Workers International Union
Wassily Leontief, Harvard University
John P. Lewis, University of Indiana
Wesley Lindow, Irving Trust Co.

EXHIBIT C–1.—*Respondents to general questionnaire (Q2)*—Continued

Name and organization

John Lintner, Harvard University
Ta-Chung Liu, International Monetary Fund
A. G. Matamoros, Armstrong Cork Co.
Stacy May, International Basic Economy Corp.
Wayne L. McMillan, Guaranty Trust Company of New York
Morris Mendelson, National Bureau of Economic Research
James Morgan, University of Michigan
Ragnar D. Naess, Naess & Thomas
Robert R. Nathan, Robert R. Nathan Associates
Hans P. Neisser, New School for Social Research
Harry Oshima, Stanford University
Margaret G. Reid, University of Chicago
Harold M. Ridlon, United States Steel Corp.
Arthur Rosenbaum, Sears, Roebuck & Co.
Murray Shields, MacKay-Shields Associates
Walter R. Stark, Loomis, Sayles & Co.
William W. Tongue, Jewel Tea Co., Inc.
Arthur R. Upgren, Dartmouth College
Merrill A. Watson, National Shoe Manufacturers Association
Hans A. Widenmann, Carl M. Loeb, Rhoades & Co.
John D. Wilson, Chase Manhattan Bank
Ashley C. Wright, Standard Oil Company of New Jersey
Wilson Wright, Procter & Gamble Co.
Julius Wyler, New School for Social Research
(2 not identified.)

EXHIBIT C–2.—*Respondents to first questionnaire (Q1)*

Name and organization

William F. Butler, Chase Manhattan Bank
Morris Cohen, National Industrial Conference Board
Louise M. Curley, Scudder, Stevens & Clark
Edward F. Denison, Committee on Economic Development
Douglas Greenwald, McGraw-Hill Publishing Co.
Joseph B. Hubbard, United Service Corp.
Robert E. Lewis, First National City Bank of New York
Tjalling C. Koopmans, Yale University
Todd May, Fortune
Gordon W. McKinley, Prudential Life Insurance Co.
Philip M. Ritz, Conference on Economic Progress
David S. Roswell, Case, Pomery & Company, Inc.
Eric Schiff, Machinery and Allied Products Institute
William Shaw, E. I. du Pont de Nemours & Co.

EXHIBIT C–3.—*Respondents to regional questionnaire (Q3)*

Name and organization

Wesley C. Ballaine, University of Oregon
Karl R. Bopp, Federal Reserve Bank of Philadelphia
Lyndon O. Brown, Dancer-Fitzgerald-Sample, Inc.
Reavis Cox, University of Pennsylvania
Addison T. Cutler, Federal Reserve Bank of Cleveland
Richard W. Graves, Indiana University
Frank A. Hanna, Duke University
Gloria Hile, Board of Governors of Federal Reserve System
Werner Hochwald, Washington University
Gordon A. Hughes, Scott Paper Co.
George B. Hurff, University of Florida
Walter Isard, University of Pennsylvania
Frank L. Kidner, University of California
Thomas G. MacGowan, Firestone Tire & Rubber Co.
Edwin Mansfield, Carnegie Institute of Technology
Gordon W. McKinley, Prudential Life Insurance Co.
Henry B. Moore, University of Alabama

EXHIBIT C-3.—*Respondents to regional questoinnaire (Q3)*—Continued

Name and organization

Franklin L. Parsons, Federal Reserve Bank of Minneapolis
Harvey Perloff, Resources for the Future, Inc.
Earl L. Rauber, Federal Reserve Bank of Atlanta
Vergil D. Reed, J. Walter Thompson Co.
Morgan H. Rice, Federal Reserve Bank of Dallas
H. M. Bidlon, United States Steel Corp.
Thomas I. Storrs, Federal Reserve Bank of Richmond
Clarence W. Tow, Federal Reserve Bank of Kansas City
Oliver P. Wheeler, Federal Reserve Bank of San Francisco

EXHIBIT C-4.—*General questionnaire (Q3), National Accounts Review Committee*

QUESTIONNAIRE

Name and organization (optional)_____

The following are among the changes in or extensions of the national accounts which have been recommended most frequently.

In column (1) please indicate by the appropriate symbol whether in previous work you have felt a need for the indicated information:

Not at all—N
Occasionally—O
Frequently—F

In column (2) please indicate by the appropriate symbol whether you would use this information in the future:

Not at all—N
Occasionally—O
Frequently—F

If you would use the information, please indicate in column (3) by the appropriate symbol whether annual or quarterly estimates or both would be substantially more useful.

Annual—A
Quarterly—Q
Annual and quarterly—A, Q

If you have no opinion on a suggested change, please leave all columns blank.

	Past need (1)	*Future desirability* (2)	*Frequency (timing)* (3)
1. Personal consumption expenditures:			
a. Add information on inventories of consumer durables.			
b. An improved allocation between consumers and business of expenditures for certain goods, e. g., autos.			
c. Add information on imputations included in the estimates so that they can be eliminated by users if so desired. (Please list the specific items desired, if any.)			
2. Gross private domestic investment:			
a. Add a classification of producers' durable equipment by type of commodity.			
b. Add a classification of producers' durable equipment by purchasing industry.			
c. Add subdivision of change in inventories by industry. (Please specify.)			
d. Add depreciation estimates:			
i. On replacement cost basis.			
ii. On declining balance basis.			

Questionnaire—Continued

	Past need (1)	Future desirability (2)	Frequency (timing) (3)
3. Government:			
a. Present reconciliation of NID consolidated Government receipts and expenditures account for Federal Government with the conventional and cash budgets.			
b. Add classification of Government purchases of goods and services into current and capital expenditures.			
c. Add classification of Government current expenditure by type of expenditure for the following types of expenditures:			
4. Personal income and expenditure account:			
a. Show information for households separately from other transactors.			
b. Show separate information for the following other groups of transactors:			
5. Personal saving:			
a. Add quarterly estimates on a balance-sheet basis (as in table 6 of National Income).			
b. Show separate information for transactors presently included in personal-saving total. (Please specify transactors for which information is desired.)			
6. Estimate GNP and principal components on a monthly basis.			
7. Constant-dollar series:			
a. Estimate GNP and principal components on a quarterly basis in constant dollars.			
b. Estimate personal income in constant dollars.			
c. Estimate components of personal consumption expenditures in constant dollars. (Please specify.)			
d. Estimate national income by industry of origin in constant dollars.			
8. Related national accounting systems:			
a. Present Federal Reserve money flow accounts on a quarterly basis.			
b. Make regular estimates of input-output system.			
c. Make regular estimates of a national balance sheet (including both tangibles and intangibles).			
d. Present regular reconciliation of the systems.			
9. Quarterly estimates:			
Published estimates in entirely unadjusted form in addition to present seasonally adjusted estimates.			

10. What changes or additions, if any, would you favor in the following distributions of income?
    a. By industry of origin
    b. By region
    c. By size of family income
11. What other changes, if any, would you favor in the national income or related accounts?
12. List, in order of priority from your point of view, the three most urgent improvements in the national income and product estimates that can be promptly made.
    a.
    b.
    c.
13. List, in order of priority, the three most important longer range improvements in the national accounts.
    a.
    b.
    c.

Questionnaire—Continued

14. Do you have substantial need for national income and product figures back of 1929 that tie in with those available for the period beginning 1929?
15. Are the descriptions of the sources and methods of estimation of the national income accounts (particularly those in part III of National Income, 1954 edition) sufficiently concrete and detailed for your purposes with respect to—
    Annual estimates _____
    Quarterly estimates _____
    If not, what further detail would you want?
16. Are the discussions of concepts (particularly in part II of National Income, 1954 edition) satisfactory?
    If not, what changes do you suggest?
17. What are the principal purposes for which you use (a) annual (b) quarterly national income and product data?

EXHIBIT C–5.—*Regional questionnaire (Q3), National Accounts Review Committee*

QUESTIONNAIRE

Name and organization (optional)_____

The following are among the changes in or extensions of the regional income estimates which have been recommended most frequently.

In column (1) please indicate by the appropriate symbol whether in previous work you have felt a need for the indicated information:

Not at all—N
Occasionally—O
Frequently—F

In column (2) please indicate by the appropriate symbol whether you would use this information in the future:

Not at all—N
Occasionally—O
Frequently—F

Please add any further remarks you may have on these items on the back of the page or on separate pages. If you have no opinion on a suggested change, please leave both columns blank.

	Past need (1)	*Future desirability* (2)
1. An estimate of total disposable income for each State.		
2. A partial or total break of State personal income by size of income.		
3. Estimates of "gross State expenditure" (aggregate and some broad components) analogous to the GNP concept at the national level.		
4. Estimates of State personal income in constant prices.		
5. Quarterly estimates of State personal income.		
6. Regional input-output matrixes.		
7. Estimates of personal income for counties.		
8. Estimates of personal income for metropolitan areas.		
9. Breakdown of income paid out by establishments producing for national or international markets and those producing for local markets (including trade and service establishments).		

10. What other changes, if any, would you favor in the regional income estimates?
11. What are the principal statistical deficiencies of the present estimates?
12. What can be done to correct these deficiencies?
13. List, in order of priority from your point of view, the three most urgent improvements in the regional income estimates.
    a.
    b.
    c.
14. What are the principal purposes for which you use regional income data?

APPENDIX D

A Comparison of National Accounting Structures in Selected Countries

(Tables prepared December 1956 by William R. Leonard, Director, Statistical Office, United Nations, in response to questions from the committee)

A COMPARISON OF NATIONAL ACCOUNTING STRUCTURES

Table D-1. Nature of Sectors and Accounts

Country \ Sector	Households (1)	Enterprises (2)	Enterprises (3)	Enterprises (4)	Enterprises (5)	General government (6)	General government (7)	Economy as a whole (8)(9)	Economy as a whole (8)(9)	Rest of the world (10)	Rest of the world (11)
United States	X	X	X			X		X		X	X
Australia	X	X	X			X	X	X		X	X
Canada	X	X	X			X	X	X		X	X
New Zealand	X	X				X	X	X		X	-
United Kingdom	X	X	X	X		X	X	X		X	X
Denmark	X	X				X	X	X	X	X	X
Norway	X	X	X			X	X	X	-	X	X
Sweden	X	X	X			X	X	-	-	X	X
France	X	X	X			X	X	-	-	-	X
Netherlands	X	X	X			X		-	-	X	X
Japan	X	X				X		X	-	X	X

Notes

General. The letters A, B, C indicate respectively production, income appropriation and capital account. The use of the letter X in columns (8) (9) (10) and (11) indicates that such accounts are an integral part of the accounting structure.

Australia. Within the combined production and appropriation account for enterprises a distinction is made between trading enterprises and financial enterprises.

United Kingdom. Within the appropriation account for general government, national insurance funds are distinguished.

Norway. Current and capital items are combined in one account for central and local government respectively. Social security agencies constitute one of the many subsectors of government distinguished.

Sweden. B' and C' here refer to "income distribution" and "consumption" account respectively.

France. In the capital account for enterprises "banques et assurances" are distinguished while in the capital account for "administrations" the sub-sector "trésor" is distinguished. In the income appropriation account for the sector "administrations" the following sub-sectors are distinguished in addition to "état" and "collectivités locales": sécurité sociale, établissements administratifs, administrations privées, administrations étrangères et internationales.

The balance of payments is divided into "opérations courantes" and "opérations financières" both sectored into "étranger", "U.E.R." and "divers".

Netherlands. The letters B_1,B_2,C', and D refer respectively to primary redistribution of income account, secondary redistribution of income account, consumption account and "goods" account. The "goods" account indicates the origin and destination of the flow of goods and services within and between sectors.

Accounts B_1 and B_2 are also provided for a supplementary sector "insurance funds" which includes private pension funds and life insurance funds as well as social security funds.

William R. Leonard
Director
Statistical Office
United Nations

A COMPARISON OF NATIONAL ACCOUNTING STRUCTURES (continued)

Table D-4. Replies to following questions

Questions / Country	1	2	3	4	5	6	7	8 (a)	8 (b)	8 (c)
Australia	No	No	All motor vehicles are treated as capital formation	Tax returns basis, original cost	No	No estimates published	Standard	No	No	No
Canada	No	No	Current expenditures	Tax returns basis, original cost	No	Product by final expenditure	Standard	No	No	No
New Zealand	Yes	Gross, separately	Current expenditures	Tax returns basis, original cost	No	No estimates published	Standard	No	No	Yes
United Kingdom	Yes	Gross, separately	Current expenditures	Replacement cost	No	Product by final expenditure and gross product by industry	Standard	No	No	No
Denmark	Yes	Gross and net, total	Current expenditures	Replacement cost	No	Product by final expenditure and gross product by industry	Standard	No	No	Yes
Norway	Yes	Gross and net, separately	Current expenditures	Replacement cost	Natural increase in forests considered as increase in stocks	Product by final expenditure and gross product by industry	Standard	No	No	Yes
Sweden	Yes	Gross and net, separately	Current expenditures	Replacement cost	Variation in timber cutting allowed for in computing increase in stocks	Product by final expenditure	Standard	No	No	No
France	No	No	Current expenditures	Replacement cost	No	Product by final expenditure	Family purchasing activity included	No	Yes	Yes
Netherlands	No	Capital formation not distinguished from current expenditures	Current expenditures	Replacement cost	No	Product by final expenditure	Standard	Yes	Yes	Yes
Japan	Yes	Total only	Current expenditures	Book values as reported in corporate enterprise survey	No	Product by final expenditure and national income aggregate	Standard	No	No	No

Questions

1. Is investment shown for each sector separately?
2. Are separate estimates provided for gross and net capital formation of central and local government?
3. Are consumer durables (other than houses and land) treated as current expenditures or investment?
4. What is the basis for the estimation of capital consumption allowances?
5. Do the accounts include allowances for depletion and discovery of natural resources?
6. Are tables published in constant prices?
7. Is the scope of non-market activity included in the estimates broader or narrower than standard practice?
8. Is there a systematic connection between the national accounts and (a) a national wealth statement or balance sheet; (b) a money flow type statement; (c) an input-output type statement

Notes. The replies to question 4 indicate the main basis for the estimation of depreciation. Replacement cost estimates may be made for certain sectors and for certain components of capital consumption in those countries where another basis for estimation is generally employed.

New Zealand. The reply to 8 (a) is in the affirmative since the present system of accounts is being currently replaced by an articulated system of production accounts involving eighteen sectors.

Netherlands. 8 (a) and 8 (b). The development of the present system is continuing and in theory provides for the inclusion of detailed accounts of financial transactions and of sector balance sheets.

William A. Leonard
Director
Statistical Office
United Nations

APPENDIX E

The National Income Accounts: Future Directions of Research and Suggestions for Improving the Basic Data

Statement prepared December 1956 by George Jaszi, Chief, National Income Division, Office of Business Economics, U. S. Department of Commerce

Part I. Future Directions of National Income and Related Research

The following statements on the future directions of national income and related research (pt. I) and on data improvements (pt. II) have been prepared in response to the request of the National Accounts Review Committee.

Let me say at the outset that I welcome your forthcoming review of our work. It will be useful to formulate and to direct public attention to the major problems with which official national income work in the United States is faced.

One of these problems—a very practical one—I should like to flag now and discuss in some detail later. There is widespread agreement as to the basic importance of national income estimates, and an urgent demand for improving their accuracy and for extending their scope. Yet—if I may generalize—there has in the last decade been no significant addition to the quantity or quality of the primary statistical data that are the raw materials of national income estimates. Also, over the same period significant reductions have been made in the funds available to the Office of Business Economics and its National Income Division, which shape these raw materials into final form.

1. Written descriptions of national income work

Needless to say, you will have the full cooperation of the National Income Division in your review. It may be helpful if I draw attention to the extensive material relating to our work that is available in written form; this material should facilitate your proceedings.

1. *Published material.*—As you know, the Survey of Current Business not only carries our regular estimates, but also analyzes these data as well as newly developed estimates not—or not yet—incorporated into our established series. In particular, I want to draw your attention to the special studies we prepare, such as that of corporate profits in the January 1956 issue of the Survey and that of manufacturing investment in the current November issue. These studies are part of our output, in addition to our regular monthly, quarterly, and annual series and the analyses that are based on them.

The definitional and statistical foundations of our work are described in detail in the National Income and other supplements to the Survey of Current Business. In addition, last year's sessions of the Conference on Research in Income and Wealth afforded me an opportunity to prepare a detailed paper in which I discuss the major conceptual problems of national income accounting as I see them, and the general lines along which future work might proceed. Also available is a document prepared by the Office of Business Economics

entitled "Program Statement for the Office of Business Economics, United States Department of Commerce" in which some of the same ground is covered.

You will note that my paper for the income conference was written in a personal rather than an official capacity. The same qualification attaches to the status of the following remarks. I have, of course, done my best to write responsibly, but my statement has not undergone official clearance.

2. *Supplementary information.*—Part II of this memorandum relating to major deficiencies and improvements in the data underlying our monthly, quarterly, and annual series should, together with the documents previously mentioned, provide a reasonably full description of the concepts and methods underlying the present national income statistics, and the vistas of progress we can discern.

You will note that our income-size distribution and State income estimates are not covered in the memorandum on data gaps and improvements. We shall be glad to furnish supplementary statements on these two topics if and when you take them up.

All we have published relating specifically to the methodology underlying our monthly and quarterly series are brief notes in the Business Statistics supplement to the Survey. But with only a few significant exceptions the sources we use for our less than annual series are those used for our preliminary annual estimates described fully in the National Income supplement. Apart from these exceptions, all that is missing is a detailed written account of the estimating procedures specific to monthly and quarterly, as distinguished from annual, estimation. I hope very much that you will be able to dispense with such a description. Given our present staff and workload, I would find it quite impossible to provide. But, needless to say, we are available to furnish whatever specific information relating to these methods you need.

You will note that I have not prepared a statement of the requirements for additional primary data that would stem from various possible extensions of our work. The memorandum submitted is confined to the statistical improvement of our existing series. This limitation suggested itself strongly because the field of possible extensions is large and our knowledge of the connected data requirements is naturally incomplete. However, when you are ready to consider extensions of our work we shall be glad to provide you with the information on associated data needs that is necessary to evaluate the projects. I might add that these needs will vary greatly from project to project.

We shall, of course, also be ready to furnish further detail relating to aspects of our work that are covered in the written material.

II. BROAD DIRECTIONS OF NATIONAL INCOME WORK

I shall turn next to the major problems which, in my opinion, national-income estimation in this country faces. I shall deal with the general direction of national-income work first, with specific areas of research second, and statistical problems last.

1. *Integrated set of national accounts.*—The scope of national income work has been broadened significantly in the past 25 years. Traditionally, the major aim of this work was to provide measures of

total national output and of its breakdowns. More recently, the aim has become that of providing a systematic account of national-economic activity. Inasmuch as the production of output is a central feature of economic activity, the two aims are obviously closely related.

If the broader view is taken, extensive bodies of other statistical information that under the narrow concept seem unrelated to the national-income estimates appear to be really part of them. The idea immediately suggests itself that national-income accounting should serve as a meeting ground for the coordination of the definitional framework of a broad range of economic statistics as well as of the underlying primary data sources and estimating methods. I consider this idea very valuable. In fact, I would go further to say that some version of it must be the goal of all who have an overall interest in economic statistics.

2. *The United States experience.*—Unfortunately, little progress has been made in the United States toward the implementation of this idea. Input-output and money-flow statistics were permitted to develop with little serious attempt to integrate them with national-income statistics. As a consequence, there is now no simple way of using them jointly with naitonal-income data. Even though our views may differ widely as to the relative merits of the three systems, I believe we can all agree that something has been lost.

Lest I be misunderstood, let me add that I am not unmindful of the difficulties involved in obtaining integration; all I submit is that a much better job than actually was done could have been done. The extent to which the systems have been integrated in some other countries provides, I believe, prima facie evidence in favor of my proposition.

Also let me emphasize that I do not mean to imply that all conflicts should necessarily have been resolved in favor of present national-income procedures. This is really an obvious point, but in view of the particular nature of my professional involvement it seems well for me to make it explicitly.

3. *Current problems.*—Turning to the present and immediate future I see two major areas of investigation in which this problem of coordination will loom large. They are the two areas in which further systematic development of the national-economic accounts is most urgently needed. The first is saving statistics. Intertwined as these are with income, expenditure, and investment, they are in principle part and parcel of the national-income accounts, and in practice they should be closely coordinated with them. I hope that the recent arrangement assigning to the Federal Reserve Board a role of leadership in this field will prove to be in harmony with the aim of fostering such coordination.

The second area is real product and productivity statistics. The National Income Division prepares the overall measure of real national product, but work on industry measures as well as on productivity is being undertaken largely by other agencies. It seems to me that this development also will raise major problems of integration.

4. *Organizational problems.*—If we subscribe to the goal of an integrated set of national economic accounts, we should examine earnestly how in practice we propose to make progress toward it. What type of organization is necessary for establishing an integrated program? What shall be the role of the various agencies in the sta-

tistical implementation of such a program? Specifically—a question in which I am very much interested personally—what shall be the place of the National Income Division in the overall scheme?

I do not think that we have as yet devised an organizational framework which will insure a systematic development of the national accounts. Interdepartmental committee work is helpful in promoting integration, but I doubt very much whether it provides an adequate solution. My skepticism stems essentially from the conviction that this type of organizational arrangement does not provide a sufficiently clear-cut center of responsibility and authority.

These organizational problems are difficult to resolve. Yet a workable solution of them is essential to further progress in national economic accounting work.

III. SPECIFIC AREAS OF WORK

The specific areas of research which, in my opinion, national income accountants should explore further, I have set forth in my paper for the 1955 income conference, already referred to, and in my detailed comments on the other conference papers.

1. *The area of agreement.*—My aim in the present statement is to make two brief remarks on the results of this conference. First, if you examine the record you will find that there was substantial agreement as to the basic desirability of most of the major proposals that were made for the improvement of the national income accounts. The points which tended to separate me from our critics were mostly practical considerations of statistical feasibility. The insufficient attention given to these considerations had in my opinion impaired the realism and cogency of some of the findings.

Let me single out some of the more significant issues on which, to my mind, there is substantial agreement.

First, as to the broad scope of the data, the value of the national income accounts would be greatly enhanced by the introduction of information relating to changes in financial assets and liabilities.

Second, further work needs to be done on capital formation, capital consumption, and saving.

Third, a classification of the various services provided by Government is urgently required.

In each of these areas we are ready and eager to go forward, and we would expect substantial results with only a moderate increase in the size of our staff. However, with the resources available to us at present, which I shall review later, progress will necessarily be very slow. The job of maintaining our current output of statistics absorbs most of our energies.

Next, I should like to comment on two other issues on which similar agreement does not exist and further clarification is needed.

2. *The Government controversy.*—The first is the Government controversy. Our present procedure of including all Government purchases of goods and services in gross national product has been criticized on the ground that not all such purchases are final. According to a large body of opinion, some Government purchases should be excluded from gross national product as being akin to purchases of raw materials and semifinished goods. I believe that our present procedure is correct.

This subject has been discussed intensively in the literature prior to the 1955 income conference. The present statement is not the medium for sorting out once more the pros and cons of this complex argument, but I should like to indicate the course that I believe future action should take. As long as there is so much disagreement on the subject, I think it ought to be pursued further. Recent argument in favor of the exclusion of Government intermediate output has proceeded mostly on a purely theoretical level, and in such general terms that it has not led to a systematic listing of the Government services that are to be excluded as intermediate. In addition, proponents of exclusion differ widely from one another. Some stake out wide areas—for instance, the entire range of defense expenditures; others adduce only rather insignificant examples—seed distributed free to farmers by experimental agricultural stations, for instance. In view of this state of affairs, I think that at the present juncture the most significant contribution to the discussion would be for proponents of the idea to prepare for a set of years an actual empirical classification of Government services into final and intermediate.

I would go one step further and suggest that the National Bureau of Economic Research undertake the task. The guiding spirits of the bureau have been the most vocal in stating the general case for the elimination of Government intermediate product, and in calling for its statistical implementation as a matter of signal theoretical and practical interest. And, needless to say, the bureau is singularly well equipped with the professional competence needed to undertake the job.

I do not believe that the task is one for the National Income Division. In the first place, proponents rather than opponents of the proposal should work on it. This is the only procedure that holds the promise of a creative result, and the one that will give the proposal the fairest chance. Secondly, I would point to the controversial state of the subject matter. Given the limitation of resources available for official national income work, other projects that will pay off with much more certainty in significant contributions to economic analysis should have overriding priority, to my mind.

3. *Entrepreneurial saving.*—The second proposal on which I should like to comment is that the national income accounts be made to show the saving of unincorporated enterprise separately from other personal saving. I agree completely with the view that information on this subject is of great importance. But it is not clear in what form and manner it can be obtained. The aim of measurement can be, alternatively, the total saving of entrepreneurial families, or the saving which entrepreneurial families make in a business as distinguished from a personal capacity. I think it is very important to distinguish clearly between these two variants. As I have explained in my income conference paper, I am strongly inclined toward the former. The latter appears to me to be a somewhat artificial abstraction, because most entrepreneurs do not themselves distinguish clearly between their business and personal finances.

The practical implementation of the definition I favor raises data problems of even graver complexity than does the implementation of the alternative one. I think that any proposal for the segregation of entrepreneurial saving should make explicit reference to these problems. Otherwise, an unduly simple view of the project is suggested

to those who are not acquainted with the data problems. It should be recognized clearly that the segregation of the saving of entrepreneurial families is not something the National Income Division as it is constituted now can accomplish by itself. A basic statistical program reporting on the finances of entrepreneurial and other families is a sine qua non. Not even the blueprints of such a program have been worked out satisfactorily.

IV. IMPROVING THE RELIABILITY OF THE ESTIMATES

I have been shifting from a discussion of conceptual problems to one relating to statistical matters, and I should like to make a few remarks about the latter subject explicitly.

1. *Present statistical system.*—Collection of primary statistical data in this country is not designed specifically to meet the needs of national income measurement. We have no integrated reporting system that yields directly the various entries in the national accounts. Instead, these entries must be derived from a multitude of primary sources—census and sample surveys, administrative statistics such as social security, tax, and budget data, and many other public and private records.

The information provided in these sources falls short of the requirements of national-income accounting definitionally and in coverage. Consequently, the actual entries in the national accounts must be derived from the primary data by estimating methods that are often lengthy, indirect, and complex, and that call for the exercise of a wide latitude of judgment when basic data are lacking or conflicting.

In the present organizational framework, the specific function of the National Income Division is this processing of primary data. Only to a very minor extent are we engaged in their collection.

Impressed by the obvious disadvantages of the present procedure, it has occurred to some that a new start is called for. What is boldly envisaged is a single unified reporting system of census-type enumerations and sample surveys which would provide directly the magnitudes required for the national accounts. I believe that such a system will remain a dream for the foreseeable future. It is not practical because it would involve a staggering volume of outlays if it were designed to yield results as satisfactory as or better than those we now obtain.

To my mind, further progress on the statistical front will be made by improving rather than replacing the sources and methods that now exist. If this is the outlook, the question arises whether further improvement is to be gained by strengthening the primary data or the estimating processes that rest on them.

2. *Data collection.*—I think the broad proposition that must be established first is that major improvements in the reliability of national-income statistics depend on the improvement of the primary data sources. The memorandum I have prepared for your committee outlines the major areas in which more and better information is needed.

3. *Estimating methods.*—But once this broad proposition has been made, it should be immediately qualified. An addition to the present strength of the National Income Division is also required. In terms of the total improvement of national-income estimates such personnel increases would yield results less striking than would a program aimed

at strengthening the basic data. But the funds needed for building up the Division are comparatively so trifling that viewed as a rate of return on investment the improvement which such action would bring about might be as impressive as that resulting from improved data collection.

Let me review the position of the National Income Division in a little more detail. On a net basis, the Division now turns out a larger volume of monthly, quarterly, and annual statistics than it has ever done in the past, and it does so on a schedule that has been accelerated considerably over the years. Also, according to my judgment, the quality of the estimates has been maintained or improved. This situation obtains in spite of a cut in staff amounting to between 15 and 20 percent over the past few years. What is the explanation?

In the first place, the National Income Division has an extremely devoted staff that performs far beyond the call of duty. But there are limits on the extent to which one can call for such gratuitous contributions. Secondly, to an increasing extent we have had to postpone repair and maintenance work on our series. So far the results of this second factor have not been perceptible, I believe. We all know that repair and maintenance are postponable to some extent. But this type of retrenchment cannot be continued indefinitely. Cumulatively, it is apt to lead to serious breakdowns. Next, we have not had the resources to experiment sufficiently with alternative estimating procedures for various components of the national accounts; nor have we been in a position to institute certain improvements in our methods of which we are aware. Finally, we have not been able to engage upon broad developmental work.

You may admit that this last circumstance is regrettable per se, but question its relevance to the improvement of our existing estimates. Actually there is an important and close link. The exploration of new areas tends to throw light on the situation in old ones. For instance, it was the cross-checks inherent in the novel interindustry studies that first suggested convincingly a downward bias in the conventional construction statistics. Similarly I would hope, for instance, that the establishment of a set of saving-investment accounts for the various sectors of the economy via direct estimates of changes in assets and liabilities would provide checks on the accuracy of our income and product estimates which would prove as useful as those now provided by the alternative calculation of national output in terms of income and of product flows.

If all these features of our recent work experience are taken into account, it will become obvious that an expansion in the staff of the National Income Division is called for; and that such an expansion would carry a clear return quite independent of that which would be yielded by an improvement in the primary data.

4. *The use of imperfect statistics.*—Having presented the case for the improvement of our estimates, I should like to close with some remarks addressed to a defense of imperfect statistics. I believe that it is of crucial importance not to create excessive expectations as to the extent to which national income estimates can be made more precise; and to make clear that used skillfully they can be extremely valuable even if they are subject to moderate errors.

The output of our economy is now flowing at an annual rate in excess of $400 billion. A $1 billion error is less than one-fourth

percent of this aggregate. I believe that even with a substantial improvement in the flow of primary data, frequent errors larger than this amount would still be inevitable. This holds true especially for our current monthly and quarterly statistics, for obvious reasons. A less obvious one perhaps deserves explicit mention. Even if our various data sources were individually vastly improved, it is very unlikely that they could be sufficiently synchronized with each other to eliminate differences in timing such as will throw the national accounts somewhat out of gear when economic conditions are changing.

Under these circumstances, it seems to me that a task of almost coordinate importance to that of improving the data is that of educating the public in how to make the best use of estimates that are subject to error. First, they should be taught not to attach significance to indicated changes that are within the margin of error of the estimates. More important, and more difficult to show, is that the inherent nature of national income statistics as approximations does not rob them of their great usefulness. Appropriately interpreted, these estimates throw a powerful light on the economic situation, in spite of the error which they contain.

I have elaborated this point in an article in the May 1956 Review of Economics and Statistics. Briefly, my position is that if the various series that compose the national income accounts are used as joint evidence to interpret the economic situation—with some awareness of the deficiencies to which the various series are subject—a substantially correct and highly informative picture usually emerges. This picture is not likely to be profoundly altered by the kind of subsequent revision of the series that is likely to occur.

Needless to say, there are exceptions to this general proposition, and no complacency with the current state of national income statistics is implied. Nevertheless, it is important to point out that errors in gross national product or its components which are quite upsetting when the series are used to measure the exact pulse beat of a particular activity are apt to cause much less disturbance if the series are used in a coherent analysis of major business developments.

Part II. Suggestions for Data Improvement

This part of the memorandum contains suggestions for filling the major data gaps in the existing annual and less than annual income and product series prepared by the National Income Division, other than the regional and size distribution estimates. Discussion of a host of detailed problems is necessarily omitted, and new data requirements that might arise from changes in concepts or further extensions of national income work are not considered.

The major product and income series are taken up in turn. In general, under each heading benchmark estimates are discussed first and ~~third~~ extrapolations later. The descriptions of statistical methodology given in the 1954 National Income supplement are assumed as a background.

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I. Personal Consumption—Commodities

1. *Integrated census program.*—The censuses of manufacturing and trade upon which the commodity-flow estimates rest should be taken

at regular intervals and if at all possible both should be taken at regular intervals and if at all possible both should be taken in the same years. There is no objection to partial substitutions of sample surveys for basic censuses, in the framework of an integrated plan.

2. *Distribution of manufacturers' sales.*—Information on manufacturers' sales distributed by class of customer, last collected in the 1939 census, is required to improve the allocation of manufactured commodities as between finished and intermediate products.

3. *Product detail.*—Allocation procedures would also be helped by more detailed product classifications based on specifications, packaging, or other characteristics which indicate whether products are used by households without further processing or become embodied in the output of other manufacturing establishments.

4. *Retail trade margins.*—Despite the wealth of data contained in the Federal income tax returns, trade margin information usable in our estimates is meager because the industry classification of the tax returns is not easily adapted to our estimates of detailed commodity groups. Wholesale trade margins in the breakdown in which we require them can be approximated reasonably well by combining detailed census data on operating expenses with tax return information on profits. But information on operating expenses has not been collected in recent retail trade censuses. Our data on retail trade margins are special tabulations prepared for us from time to time by the Census Bureau in cooperation with the Internal Revenue Service, and are admittedly deficient in quality. These data should be improved. The possibility of obtaining margin data by means of Census Bureau surveys might be reconsidered. This procedure could yield data for commodity classes rather than for kinds of business and would be better suited to our estimating procedure.

5. *Automobiles.*—There are some deficiencies in the price information relating to autmobiles. But the main problem is the allocation of automobile purchases between personal and business use. A fixed percentage is now used, derived from traffic surveys relating to mileage driven for various purposes in the 1930's. This procedure can be improved by the incorporation of the results of newer traffic surveys that are now becoming available, and will yield good approximations for the allocation of automobile operating expenses. But a truly satisfactory allocation of auto purchases is not possible without regular data on net purchases by various purchaser groups. These data might be secured in connection with the Office of Business Economics-Securities and Exchange Commission plant and equipment, and the Federal Reserve Board surveys of consumer finances. Inasmuch as the proportions of consumer and business use vary, this information is required not only for benchmark years but for making the current estimates as well.

6. *Business expense accounts.*—Some expenditures for consumer-type commodities (mainly purchased meals and beverages) are charged to business expense. A special allowance has to be made for these expenditures in reconciling the income and product flow estimates of the national output. Exploratory work should be undertaken to determine whether business expense account data (or sellers' records) could be made available in a form that would throw light on the magnitude of these expenditures.

7. *Retail trading stamps.*—Information is needed to permit proper adjustment for the use of retail trading stamps, which have become important since 1947. This matter is more important for the establishment of benchmark estimates than for their extrapolation, since inadequate adjustment results in errors in the level of the former, whereas errors in the extrapolation of the commodity detail tend to be offsetting in the aggregate.

8. *Retail sales extrapolation.*—The extrapolations of the commodity-flow benchmarks are based largely on retail sales data by line of trade; these data do not lend themselves to an accurate estimate of detailed commodity composition. The feasibility of collecting key commodity information in connection with the retail trade survey of the Census Bureau should be explored.

9. *Annual commodity flow estimates.*—The possibility of making annual estimates by an abbreviated commodity-flow method is being studied. These would serve as partial substitutes for the extrapolations based upon retail sales. These estimates would probably require somewhat greater commodity detail in the Annual Survey of Manufactures, and annual margin information comparable to that needed for the benchmark estimates.

10. *Reconciliation of estimates based upon censuses of manufactures and retail trade.*—A basic statistical problem in this area warrants further research: consumer commodity aggregates estimated by the commodity-flow method (involving a buildup from the manufacturing census) are much higher than estimates based directly on the retail trade census. (N. B.: The latter must not be confused with the estimates referred to in point I.8 in which retail sales data are used only as extrapolators.) Information should be developed to facilitate the analysis of this discrepancy. Provision in the retail trade census of commodity breakdowns as detailed and as comparable as possible with the commodity breakdowns of the manufacturing census would be a significant step in this direction, but other techniques should also be explored.

II. PERSONAL CONSUMPTION—SERVICES

1. *Comprehensive census program.*—Census enumerations in this area should be extended and regularized.

2. *Allocation problems.*—Allocation problems analogous to those mentioned in connection with commodities (see point I.6) arise in connection with services, and an attempt should be made to tackle them by similar techniques.

3. *Current sample surveys.*—The Census Bureau program for obtaining annual sample information on services should be resumed and extended, and consideration should be given to the possibility of collecting data on a less than annual basis.

III. PERSONAL CONSUMPTION—CONSTANT-DOLLAR ESTIMATES

1. *Item coverage.*—The National Income Division has compiled a list of items of personal consumption for which price information is at present lacking or inadequate.

2. *Geographic coverage.*—Many of the Bureau of Labor Statistics item indexes used are based on a subsample of only 14 cities in the Consumer Price Index. It would be desirable to obtain this information for the 46 cities used in the Consumer Price Index.

3. *Commodity specification.*—The Department of Agriculture price series used to deflate the rural portions of consumer purchases are not based on uniform product specifications and therefore fall short of the standards that are usually regarded as desirable in price index number design.

IV. NEW CONSTRUCTION

1. *A comprehensive new program.*—A program for a basic improvement of construction statistics is being formulated by the agencies compiling them, and consequently this matter is touched upon only briefly in this memorandum. Aside from strictly statistical matters of coverage, valuation, and timing, important semiconceptual problems affecting the consistency of the national income accounts will need to be dealt with. These include the distinctions among construction, equipment, and repair and maintenance expenditures, and the handling of so-called speculative profits, mainly in private residential nonfarm construction, which are omitted from the present data. It seems important that in any new plans that may be formulated the requirements of the national income accounts should be fully considered.

2. *Legal form breakdown of investment.*—To improve the estimates of personal saving derived from changes in personal assets and liabilities, an improved breakdown of investment by legal form of ownership is required. The information might be obtained partly from the construction estimates and partly by exploiting further the potentialities of the Commerce-Securities Exchange Commission plant and equipment survey (discussed hereafter). The requirement for a legal form breakdown of inventory holdings should be kept in mind in connection with the series used to extrapolate the inventory benchmark estimates (also discussed later).

3. *Constant-dollar estimates.*—The available price indexes for new construction refer to cost prices and are therefore inappropriate for the deflation of the current dollar estimates, which are generally in terms of selling prices. Moreover, even as cost indexes, the measures, prepared largely by private companies, seem outmoded, insofar as can be established from the rather incomplete descriptions that are available of their underlying methodologies. The initiation of an up-to-date program for measuring construction prices, which will tackle the difficult problems that arise in this area, strongly suggests itself.

V. PRODUCERS' DURABLE EQUIPMENT

1. *Integrated census program.*—The commodity flow method for estimating consumer commodities is also the principal one used for estimating producers' purchases of durable equipment. Accordingly, the requirement for an integrated census program noted above in connection with the former series holds also the latter.

2. *Allocation problems.*—The main allocation problem is to distinguish complete items that are included in gross capital formation from parts that are not. An expansion of the materials-consumed data of the census of manufactures to include all principal equipment-type items would be of substantial assistance in solving this problem.

Similar surveys for selected nonmanufacturing industries would also be needed.

3. *Government purchases.*—These purchases must be deducted in arriving at private capital formation. They present a substantial problem because they are a significant and variable proportion of the total. The necessary information might be obtained from the records of the purchasers or of the sellers. The data from Federal Government sources now available are deficient in coverage, timing, and classification (by type and as regards the distinction between complete items and parts). The State and local data assembled by the Census Bureau are deficient mainly as to classification. Alternatively, the information might be obtained from sellers' records by expanding the census of manufactures (and the annual surveys) to include a question relating to sales to government. There are difficulties involved in this approach but they should not be insuperable. Corresponding information from wholesale trade would also be needed.

4. *Information on wholesale margins.*—Given appropriate information on Government purchases the annual surveys of manufactures could be used to bring the census-based benchmark estimates closer up to date. In connection with this method, annual information on operating expenses of wholesalers of equipment items would be desirable in order to estimate wholesale margins. This information might be obtained in connection with the Census Bureau annual wholesale trade report if publication of that report were resumed.

5. *Other information.*—To bring up to date estimates based upon the census of manufactures and on the annual surveys of manufactures (or also as a substitute for the latter) two procedures should be considered: First, procurement of selected type-of-commodity and type-of-purchaser information in connection with the Office of Business Economics industry survey, so that the sales data in that survey can be used as extrapolators; and second, a strengthening of the Commerce-Securities Exchange Commission plant and equipment survey to yield separate data on equipment purchases. The present method of extrapolating the benchmarks involves in essence a residual estimate of equipment purchases by the combined use of the plant and equipment survey and the Business and Defense Services Administration construction data, and it is a makeshift mainly because of the definitional and statistical noncomparabilities between the two sources.

6. *Constant-dollar estimates.*—Additional price information for many categories of producers' durable equipment not covered in the BLS wholesale price index would improve the deflated figures.

VI. CAPITAL CONSUMPTION ALLOWANCES

1. *Depreciation charges.*—Improvement of these estimates would be along the lines suggested later in this memorandum, in connection with corporate profits and entrepreneurial income. The special internal-revenue service tabulations of sole proprietorship and partnership returns should carry the depreciation item regularly.

2. *Capital outlays charged to current expense.*—Information specified in connection with the allocation of producers' durable equipment (see point V. 2) would be used to improve our estimates of this item also.

3. *Accidental damage to fixed capital.*—Improvements are desirable both in the accuracy of the basic data and in their classification by type of property.

VII. CHANGE IN BUSINESS INVENTORIES—BOOK VALUES

1. *Speedup of Internal Revenue Service tabulations.*—Within the framework of the present methodology, a speedup of the Internal Revenue Service tabulations is the first requirement. (This statement is not intended to prejudice the suggestion that a switch to census-based benchmarks should be explored, mainly because the latter information is on an establishment rather than on a firm basis.) The proposed Internal Revenue Service tabulations of the business indicator series would go far toward meeting our requirements.

2. *Unincorporated enterprise.*—Tax return information on the inventory holdings of sole proprietorships has not been tabulated since 1945. Tabulation of this item should be resumed. Alternatively, census information relating to unincorporated enterprise inventories needs to be strengthened. (See earlier comments relating to the need of an integrated, regular census program in connection with the consumer commodity and producers' durable equipment estimates.)

3. *Retail inventories.*—As regards the extrapolating series, a strengthening of retail inventory statistics to take adequate account of small independent retailers is the main requirement.

4. *Inventories outside manufacturing and trade.*—The quarterly Securities Exchange Commission tabulations of current assets and current liabilities of United States corporations are now not in time for the current quarterly national product estimates. Accordingly, these estimates do not reflect inventory changes outside manufacturing and trade. Lack of coverage of the noncorporate area outside manufacturing and trade probably does not constitute a significant deficiency, as compared with the other shortcomings of the inventory figures.

5. *Inventories in transit.*—Inventories in transit tend to disappear from the accounts. The possible magnitude of the consequent distortion in the change of inventories figures should be investigated. Information on accounting methods, on the mail float of commercial documents, and on the volume of goods in transit is relevant.

VIII. CHANGE IN BUSINESS INVENTORIES—DEFLATION AND REVALUATION

1. *Inventory accounting methods.*—Better knowledge of the accounting methods actually employed by business is required. Our present procedures for revaluing the book data are based on rather broad assumptions as to the valuation methods these data reflect. We need more information as to the extent to which Fifo, Lifo, average cost, specific identification, and other methods are used by businesses. It would also be helpful to find out more about the application of the lower of cost or market rule. Information would be desirable also relating to the scope of the cost elements included in the valuation of inventories, e. g., the extent to which overhead costs are included. This information would aid in the construction of the more appropriate price indexes. The extent to which standard cost valuation is used in the reporting of inventories should also be investigated.

It would be premature to try to be precise at this time as to whether the foregoing type of information should be in the form of periodic surveys of accounting methods, or whether, and to what extent, it should be implemented by a regular reporting of book value data classified to distinguish the several underlying accounting methods.

2. *Commodity composition.*—Additional information on the commodity composition of inventories would be of great value in the deflation of the non-LIFO inventories, by making possible a more selective use of the available price-index information. It would also facilitate the requisite LIFO estimate since the method is characteristically used for only certain types of inventories in some industries.

3. *Price data.*—For inventory deflation purposes price data should be combined into group indexes which represent industry groupings rather than commodity groupings, and should be weighted by the commodity composition of inventories in each industry rather than by sales. In addition, the price indexes should be constructed so as to permit measurement of the prices of purchased inventories at the transaction stage at which they are acquired by the inventory holder. Also, the possibility of developing special indexes to measure the manufacturing costs reflected in the valuation of goods in process and finished product inventories should be explored. Finally, there are indications of seasonal variations in the commodity price data utilized in the deflation procedure; these should be examined and quantified, possibly by the Bureau of Labor Statistics.

IX. NET FOREIGN INVESTMENT

1. *Timing.*—The timing of foreign trade statistics should be adjusted on the basis of sample surveys from the time of loading or unloading or crossing of the border, to the time title to the goods changed.

2. *Valuation.*—Further study is required of the differences between the valuation of merchandise in the trade statistics and in actual payments. A past survey of imports should be repeated and extended to exports.

3. *Speedup in reporting.*—A speeding up in the compilation of merchandise trade data is desirable to provide information in time for the current quarterly product estimates.

4. *Constant-dollar estimates.*—The volume and unit-value estimates should be reviewed mainly because of large gaps in the commodity coverage and because the linking procedures used are not consistent with the fixed base period that underlies the deflation of gross national product in general. It might be worthwhile to initiate the systematic compilation of price data (or direct quantity data) relevant to the measurement of the real volume of nonmerchandise items.

X. FEDERAL GOVERNMENT PURCHASES AND TAXES

1. *Basic recasting of Government accounts.*—It is probably unrealistic envisage a basic recasting of Treasury and Budget Bureau data on Government expenditures and receipts which in coverage, classification, and timing would be a close approximation to the Federal Government sector as defined best for a system of national accounts. The following recommendations are more limited.

2. *Timing of Government checks.*—Government expenditures are reported both on a checks-issued and on a checks-paid basis. From the standpoint of national income accounting neither is strictly appropriate. In particular, it would be important to measure checks made out to business as of the date they are received by business. A study of the characteristics of the float of Government checks might permit the estimation of an adjustment factor. Such a study might also indicate whether items other than the float cause discrepancies between checks-issued and checks-paid reporting.

3. *Receivables and prepayments.*—The Treasury series include prepayments for goods and services scheduled for delivery in future accounting periods, payments for goods and services that have been delivered in past accounting periods, and do not reflect current deliveries for which Government payments have not yet been made. When Government expenditures are changing rapidly this may cause significant discrepancies with the business records on which the other entries in the national accounts are based. At present an adjustment is made utilizing Securities Exchange Commission-Federal Trade Commission data on changes in business receivables and prepayments from Government. However, the financial reports of the corporations filing with the two agencies do not follow uniform accounting procedures, so that adjustments to the data as reported must be made, and the data are not available in time for the current quarterly estimates. As an alternative to these data, the Department of Defense, whose transactions give rise to the major timing discrepancies under this heading, may be able to devise a means of procuring the required information.

4. *Renegotiation.*—More information is needed on the magnitude of the funds recovered by contract renegotiation, and some basis provided for their allocation to the periods to which the contracts involved pertain.

5. *Classification of expenditures.*—An improved classification of expenditures would also make it possible to improve the synchronization of our series. For instance, if Government wage and salary payments were distinguished in the expenditure records, we could make sure that the timing of these payments is the same as that of the corresponding entry in the income accounts, which is based on different source data. Similar comments apply to transfer payments and some other items.

6. *Federal taxes.*—Federal tax data, basically fairly adequate, have been subject to increased delays in reporting. The individual income-tax estimates could be improved by having a telegraphic report for the third month of each quarter similar to the report prepared in June for the fiscal year. A speedup in the reporting of excise taxes would help in the estimation of current indirect business taxes. In addition, the individual income-tax estimates could be improved by a reporting of their collections separately from the collection of old-age and survivors' insurance employment taxes (as was done prior to 1951).

XI. STATE AND LOCAL GOVERNMENT PURCHASES AND TAXES

1. *Timing of Census Bureau reports.*—Data based upon census and annual survey data of the Bureau of the Census are subject to varying lags. The report on local government receipts and expenditures is received in August, 1 month after the national income number of the

Survey goes to press. It would be helpful if segments of the report, notably the summaries on taxes and construction and operating expenditures, could be made available in time for the July deadline.

2. *Current quarterly expenditure information.*—Quarterly data comparable to those published in the Census Bureau reports on an annual basis are not available. The existing information for making the estimates is incomplete. We understand that a program of quarterly reporting is under consideration in the Census Bureau. Such a program should be encouraged. It may also be noted that quarterly data would facilitate a more accurate statement of the calendar year totals of local government units. At present the reported receipts and expenditures of these governmental units are treated as occurring in the calendar year in which their fiscal periods end.

3. *Receipts.*—For the benchmark estimates a reporting of nontax receipts and certain taxes in greater detail would provide a more satisfactory basis for allocating them between persons and business firms. Quarterly reporting of government receipts would also be desirable.

XII. CONSTANT-DOLLAR GOVERNMENT PURCHASES

Information on the product breakdown of purchases and on the prices applicable to these breakdowns is deficient. The information on product breakdowns should be improved and the development of price indexes applicable to government should be considered, at least in such critical areas as defense purchases where the construction of quantity and price index numbers is especially difficult.

XIII. WAGES AND SALARIES

1. *Individual industry estimates of wages and salaries.*—Our basic estimates of wages and salaries in most private industries come from reports of total payrolls covered by the unemployment insurance program. To the reported amounts we apply "small firm raising ratios," which raise the figures to include payrolls of firms too small to be included in the unemployment insurance program. It would be desirable to have up-to-date small firm raising ratios. Those we are using are based on an old-age and survivors' insurance study of the first quarter of 1951. We can also specify improvements in the data we obtain on payrolls of employees excluded from, or only partially covered by, social-security programs. This applies especially to domestic, nonprofit institutions, military, and State and local government payrolls.

2. *Control total for wages and salaries.*—We adjust the sum of the original industry estimates to a control total. Our present method of combining old-age and survivors' insurance and unemployment insurance data into a control total has been weakened since the two systems have become noncomparable as to taxable wage base and industry coverage. It is conceivable that a satisfactory control total might be obtained by adding up the employers' copies of income tax withholding slips. It is important that the National Income Division be consulted in the formulation of any plans for the tabulation of these data.

3. *Bureau of Labor Statistics extrapolators.*—The Bureau of Labor Statistics payroll data used to extrapolate the benchmark estimates

have been highly accurate in general, but ways of strengthening them further should be explored.

XIV. SUPPLEMENTS TO WAGES AND SALARIES

1. *Internal Revenue Service benchmarks.*—A speedup of Internal Revenue Service data would improve our benchmark estimates for employer contributions to private pension plans.

2. *Private pension and related plans.*—Data are needed on the large and growing area of employer contributions to private pension, health and welfare, group insurance, and supplementary unemployment benefit plans. Proper benchmark information is lacking for some components, and the data available for making current estimates are generally poor. In addition, there is some risk of duplication when, as is now the case, a wide variety of source information is used to derive an estimate for a closely related group of items. The possibility of a unified approach to the estimation of these items on the basis of information that might be obtained either from tax returns or from a special survey should be explored.

XV. INCOME OF UNINCORPORATED ENTERPRISE [1]

1. *Benchmark estimates.*—The Internal Revenue Service furnishes us periodically with detailed tabulations relating to sole proprietorships and partnerships. This flow of information should be regularized and should cover both forms of legal organization for identical years. Inasmuch as census material is used also in deriving the benchmark estimates, the requirement for a regular, integrated census program, voiced earlier in this memorandum in connection with the consumption and investment series, holds for the income of unincorporated enterprise also.

2. *Speedup of Internal Revenue Service data.*—Some form of speedup of the Internal Revenue Service data is essential. The program for a special tabulation of Business Indicator Series from the income tax returns, which is now being proposed, would meet our requirements. (If this program does not materialize, the possibility of mining further the old-age and survivors' insurance data on the incomes of self-employed should be explored.)

3. *Current information.*—Even given the speedup of the Internal Revenue Service data that is feasible, we would be short of current quarterly and annual information. A sample survey of unincorporated business should be seriously considered to fill this gap.

4. *Internal Revenue Service audit control program.*—The audit control program of the Internal Revenue Service should be extended to partnerships and periodic surveys of both forms of legal organization should be made. There is also some scope for making the information collected somewhat better adapted to the needs of national income measurement.

XVI. RENTAL INCOME OF PERSONS

1. *Special Internal Revenue Service tabulations of cash rents.*—The cash component of the series could be made substantially more reliable

[1] The estimates of the net income of farm proprietors which in the main are prepared by the Department of Agriculture are not considered in this memorandum. We may note that a speedup in the monthly series on cash marketings would permit a corresponding advance in the release date of our personal income series.

if certain special tabulations could be obtained from individual income-tax-return rent schedules. The figures for nonfarm cash net rents and net royalties are derived by indirect estimation of the corresponding gross receipts and expense deductions. Internal Revenue Service tabulation of such gross receipts classified by property type, and of receipts and expense items shown on complete rent schedules (i. e., schedules with both tax and depreciation entries) for each type, would provide a much better basis for estimating these series.

2. *Imputed rents.*—Gross imputed space rental value is now estimated from rental rate averages derived from the 1940 census and moved by reference to the Consumer Price Index rent index. The remoteness of the benchmark is particularly unfortunate in this case because since the early 1940's the rental market and, hence, the rent index have centered increasingly on multifamily housing, supply-demand conditions for which have clearly differed from those for owner-type dwellings. To correct the resultant weakness in the estimates, we need a new benchmark, such as might be derived now by inference from Bureau of Labor Statistics data on rented one-family units sampled in recent years for the Consumer Price Index, and later, from direct information on the rental value of owner-occupied units to be obtained in connection with the 1960 census. A subindex of the Consumer Price Index representing the nationwide movement of rental rates for one-family houses would also be needed to interpolate and extrapolate the benchmarks for the imputed rental estimates.

The data gaps in the current information on the housing inventory and on repair and maintenance outlays are also of considerable importance. Our knowledge of these items is materially strengthened, though far too seldom, by special surveys made in connection with the monthly report on the labor force sample. In addition, well-designed consumer expenditure surveys are helpful for deriving benchmarks also for various other expense items. Regular data on conversions and demolitions to complement the Bureau of Labor Statistics series on housing starts would be extremely valuable, not only for us but also for housing market analysis. (It may be noted that some of this information might be obtained in connection with the expansion in the research program of the Housing and Home Finance Agency that is now being formulated.)

3. *Other improvements.*—More frequent tabulation of the Internal Revenue Service proprietorship data, already mentioned in connection with the entrepreneurial income estimates, would improve the rental estimates also. Data to permit an allocation of property taxes among residential and other types of real property, which might be obtained in connection with the next census of State and local governments, would also be helpful.

XVII. CORPORATE PROFITS AND DIVIDENDS

1. *Speedup of Internal Revenue Service data.*—The earlier noted Business Indicator tabulations would meet our requirements.

2. *Audit control program.*—A systematic audit control program analogous to that for individual income-tax returns should be developed.

3. *Speedup of Securities Exchange Commission—Federal Trade Commission data for manufacturing.*—It would be desirable to obtain

a speedup of these data so that they are available for inclusion in the current quarterly estimates of the national income and product accounts.

4. *Extension of sample surveys to nonmanufacturing.*—Comprehensive current quarterly coverage of nonmanufacturing would be desirable, but trade and construction are probably the two industries on which information is most urgently needed.

5. *Firm versus establishment classification.*—Corporate profit estimates are classified industrially on the basis of the firm. This results in noncomparability with other income shares which are classified on an establishment basis. As a practical matter the distortion is seriously disturbing in the comparison of corporate payrolls and profits in a limited number of industries. Special tabulations now being prepared by the Census Bureau may provide a basis for making selective adjustments, or at least suggest what additional data necessary for this purpose might be made available.

XVIII. INTEREST

1. *Internal Revenue Service benchmarks and speedup.*—The most urgent needs from the standpoint of improving the interest estimates more frequent tabulations for sole proprietorships and partnerships and earlier availability of the Internal Revenue Service tabulations, particularly for corporations. It may be noted that the present plans for the Business Indicator series will not help us because interest items are not included.

2. *Other information.*—The figures on consumer interest could be made significantly more reliable if there were available a representative sample series on interest rates currently being paid. Similar information on residential mortgage interest rates is also needed. The Bureau of Labor Statistics has some interest in such series, in connection with the Consumer Price Index index.

APPENDIX F

Personnel and Appropriations for Work of National Income Division, Office of Business Economics, United States Department of Commerce

Table F–1.—*Personnel and expenditures of National Income Division*

Fiscal year	Personnel				Salaries and expenses
	Average number	Year-end	Professional	Clerical	
1951	48.0	47	32	15	$241,440
1952	44.0	44	30	14	253,065
1953	42.8	45	31	14	243,060
1954	38.1	38	26	12	220,000
1955	34.0	40	27	13	211,425
1956	38.0	37	24	13	237,176
1957 [1]	39.0	35	22	13	243,835

[1] Personnel figures are estimated as of June 30, 1957.

APPENDIX G

Preliminary National Balance Sheet, 1955, by Raymond W. Goldsmith

(Reproduced from 37th annual report of National Bureau of Economic Research, Inc.)

TABLE 2.—*Preliminary national balance sheet, 1955*

[Current value; billion of dollars]

	Nation (1)	Consumers[1] (2)	Farm business (3)	Nonfarm nonincorporate business[2] (4)	Financial intermediaries[3] (5)	Other corporate business (6)	Federal Government[4] (7)	State and local governments (8)
Tangible assets:[5]								
Residential structures	343	280	17	16	1	28	1	4
Nonresidential structures	321	20	16	20	3	140	31	91
Land[6]	225	30	69	11	1	48	11	26
Producer durables	160	1	13	23	1	114	1	4
Consumer durables	144	144	(7)	(7)	(7)	(7)	(7)	(7)
Inventories	111	(7)	17	17	(7)	69	7	(7)
Monetary metals	26	1	(8)	(8)	(8)	(8)	24	(8)
Total	1,329	506	137	86	6	396	75	124
Intangible assets:								
Currency and deposits in other financial institutions	311	158	7	18	78	32	8	13
Life-insurance reserves[9]	80	80	(7)	(7)	(7)	(7)	(7)	(7)
Pension and retirement funds, private (noninsured)	15	15	(7)	(7)	(7)	(7)	(7)	(7)
Pension and retirement funds, Government[10]	58	58	(7)	(7)	(7)	(7)	(7)	(7)
Receivables from business	123	1	(9)	8	43	50	10	(7)
Receivables from households[11]	53	(7)	(7)	8	25	19	(7)	(7)
Mortgages	130	21	(7)	1	103	2	4	(7)
Securities, Federal	272	61	(9)	7	168	22	(7)	14
Securities, State and local	40	19	(7)	(12)	25	1	1	(7)
Securities, corporate bonds	69	16	(7)	(12)	54	(12)	(7)	(7)
Securities, corporate stock	405	321	(7)	1	28	50	(7)	(7)
Equity in col. 4[13]	83	83	(7)	(7)	(7)	(7)	(7)	(7)
Miscellaneous assets	69	4	3	(12)	17	12	(14) 33	(12)
Total	1,713	833	10	42	540	203	58	27
Valuation difference[15]	32	(7)	(7)	(7)	(7)	32	(7)	(7)
Total assets	3,074	1,342	147	127	545	631	130	151
Liabilities:								
Currency and deposits	331	(7)	(7)	(7)	304	(7)	27	(7)
Life-insurance reserves	82	(7)	(7)	(7)	82	(7)	(7)	(7)
Pension and retirement funds[10]	73	(7)	(7)	(7)	73	(7)	(7)	(7)
Payables to banks	56	15	5	11	(7)	25	(7)	(7)
Other payables to business	87	39	2	2	2	49	2	(7)
Mortgages	130	82	9	28	(7)	17	(7)	(7)
Bonds and notes	397	(7)	(7)	(7)	2	70	279	4
Miscellaneous liabilities[16]	110	3	(12)	8	34	14 65	1	(12)
Total	1,265	128	10	44	498	226	309	46

See footnotes at end of table.

TABLE 2.—*Preliminary national balance sheet, 1955*—Continued

(Current value; billions of dollars)

	Nation	Consumers	Farm business	Nonfarm noncorporate business [2]	Financial intermediaries [3]	Other corporate business	Federal Government [4]	State and local governments
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Equities:								
Unadjusted	1,777	1,214	132	83	48	373	−179	106
Valuation difference [5]	22	(7)	(7)	(7)	(7)	32	(7)	(7)
Total	1,800	1,214	132	83	48	405	−179	106
Total liabilities and equities	3,674	1,342	147	127	545	681	130	161

[1] Includes households (farm and nonfarm), nonprofit organizations, and personal trust funds.
[2] Includes all multifamily and commercial real estate owned by individuals.
[3] Includes Federal unemployment trust fund and Federal life insurance funds as well as pension and retirement funds (private and governmental).
[4] Consolidated basis. Includes Federal corporations and Treasury monetary funds. Military assets excluded.
[5] Excluding military assets.
[6] Includes subsoil assets and forests.
[7] Not applicable.
[8] Less than $500 million.
[9] Net of policy loans.
[10] Includes Federal unemployment trust fund and Federal life-insurance funds as well as Government pension and retirement funds.
[11] Includes loans on securities.
[12] Not estimated, but presumed to be small.
[13] Equity in farm business has been excluded to preserve comparability with the balance sheets in A Study of Saving (vol. III), where farm households were included in the farm sector.
[14] Includes accrued corporate income taxes ($18 billion).
[15] Valuation difference on "securities, corporate stock;" i. e. market value ("securities, corporate stock," col. 1) less book value ("equities, unadjusted," col. 6).
[16] Includes borrowing on securities and accrued items.

NOTE.—Figures will not always add to totals because of rounding.

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